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ESSENTIALITY OF ENVIRONMENTAL MANAGEMENT EDUCATION IN ACADEMIC CURRICULUM: A NEED OF TIME.

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ABSTRACT

This article provides an overview of the development and defining characteristics of environmental education (EE) as it is currently a global issue and describes the breadth of the field. This background provides context for a brief definition of environmental education. The focus on human health and quality of life highlighted the responsibility that people bear, individually and collectively, for the quality of the environment in which we all live. It also clearly emphasized that humans are an integral part of the environment, rather than apart from it, and highlighted how human activity affects the environment. This change of perspective spawned calls for education that fosters citizen willingness and ability to participate in maintaining a clean and healthy environment-not just for humans, but for all life. Environmental education draws its emphasis on learning through observation, inquiry, and discovery. From conservation education comes environmental education's focus on current environmental problems and the wise use of natural resources. From outdoor education comes the use of the out-of-doors as a learning setting. And from the progressive education movement come an emphasis on lifelong learning and on holistic, interdisciplinary approaches to education.

KEYWORDS: Environmental sciences, Sustainable development, 3R Policy.

1. INTRODUCTORY NOTES

The environment is the aggregate of all the conditions that support living things. In turn, living things, including humans, are all interactive parts of the environment. The environment consists of both natural and human-made systems. The natural environment includes the bio-

system that supports all living things. The built environment is the human-made system, which is supported by the natural environment. The state of the natural environment ultimately determines the quality and survival of life on Earth. Environmental education is a lifelong multi-disciplinary approach to learning that helps people to understand and appreciate the environment and their connection to and impact on it. Environmental education is a process which develops awareness, knowledge and understanding of the environment, positive and balanced attitudes towards it and skills which will enable students to participate in assessing the state of the environment. Environmental education prepares us for an ecologically sustainable future. It empowers individuals to maintain and restore the Earth's natural systems and fosters support for the wellbeing of future generations by promoting sustainable lifestyles. This requires understanding of the need to achieve a balance between the environmental, social and economic impacts of development. Environmental education involves respecting and valuing the achievements of the past and supporting the preservation of those aspects of the built environment which remind us of those achievements. Environmental education is the responsibility of the whole school community. It is more than a curriculum issue and involves schools in managing resources and grounds in a way that causes no significant damage to the environment and considers the needs of future generations. The comprehensive approach to environmental education outlined in this policy will enable students to participate actively in improving the school environment, address local environmental issues, form sound judgements on global environmental issues, play an active role and participate actively as global citizens in protecting the environment. Environmental education also has a spiritual focus, inspiring an emotional and sensitized response from people, not only in their appreciation of the wonders of the natural world, but making them feels at one with the environment.

2. THE RATIONALE FOR ENVIRONMENTAL EDUCATION

Complex changes to the world's natural systems are occurring rapidly. Some of these changes are global, as in the case of the enhanced greenhouse effect and global warming. Often they are regional, as with the increasing incidence of blue-green algae in our river systems. Often too, the damage is local, such as soil erosion and salinisation resulting from land clearing. Industrial and urban waste and the degradation of agricultural land associated with land clearing, the use of chemicals and poor land management, have all placed stress on the environment. The results of environmental stress are increasingly apparent in such effects as global warming, soil salinisation, air and water pollution, the contamination and

degradation of land, and ozone depletion. *Agenda 21*, the global initiative that was drawn up at the United Nations' Earth Summit in 1992, provides the policy framework for international action on the environment. Underlying *Agenda 21* is the principle of ecologically sustainable development, that is "*a pattern of activities that meet the needs of the current generation without prejudicing the ability of future generations to meet their needs*". Ecologically sustainable development relates to those human activities that compromise a balance between economical, environmental and social forces. Any effective policy framework for protecting and managing the natural and built environments requires an integrated approach: a sound system of government regulations, scientific and technical knowledge, international relevance, a capacity for research and development, effective communication, community participation and responsible behaviour across all sectors of the community and government. Environmental education seeks to achieve the level of competence and citizenship in all students that will enable them to contribute to the achievement of sustainable societies. Through environmental education, students acquire knowledge, skills and attitudes to enable them to form judgements about sustainable lifestyles and to participate in environmental decision-making. They can also acquire technical skills associated with environmental management, such as environmental cost accounting and life cycle analysis. When environmental education is incorporated into the school curriculum, students will:

- Learn about the environment
- Develop skills to investigate and solve issues in the environment
- Acquire attitudes of care and concern for the environment
- Adopt behavior and practices which protect the environment, and.
- Understand the principles of ecologically sustainable development.

3. THE AIMS AND OBJECTIVES OF THE PRESENT STUDY

Environmental Education aims to foster students' understanding of the environment as an integrated system, and to develop attitudes and skills which are conducive to the achievement of ecologically sustainable development. The main Objectives of Environmental Education knowledge and understandings is all about:

- The nature and function of ecosystems and how they are interrelated.
- The impact of people on environments.
- The role of the community, politics and market forces in environmental decision-making.
- The principles of ecologically sustainable development and career opportunities associated with the environment skills.

- Applying technical expertise within an environmental context.
- Identifying and assessing environmental problems.
- Communicating environmental problems to others.
- Resolving environmental problems.
- Adopting behaviours and practices that protect the environment.
- Evaluating the success of their actions and values and attitudes related.
- A respect for life on Earth.
- An appreciation of their cultural heritage.
- A commitment to act for the environment by supporting long term solutions to environmental problems.

4. THE MAJOR FOCUS AREAS

To achieve the objectives of environmental education, schools must address all three focus areas in ways meaningful to their school communities. During the 1970s and early 1980s, international and national conferences established a framework of goals and objectives for environmental education. This framework centers on engaging citizens in resolving environmental issues and preventing new problems from arising. The five broad objectives set forth by the world's first intergovernmental conference on environmental education, held in 1977 at Tbilisi, in the former Soviet republic of Georgia, are representative of the thinking of the time (UNCED, 1978).

- Awareness to help social groups and individuals acquire an awareness and sensitivity to the total environment and its allied problems.
- Knowledge to help social groups and individuals gain a variety of experiences in, and acquire a basic understanding of, the environment and its associated problems.
- Attitudes to help social groups and individuals acquire a set of values and feelings of concern. For the environment and the motivation for actively participating in environmental improvement and protection.
- Skills to help social groups and individuals acquire the skills for identifying and solving environmental problems.
- Participation to provide social groups and individuals with an opportunity to be actively involved at all levels in working toward resolving environmental problems.

Educational Goals of Environmental Education

Over the years, various scholars and organizations have built a structure of specific educational goals on the foundation laid by Tbilisi and other early conferences. The language has changed over time, certain categories have been combined and split in different ways and new understandings (for example, about some of the determinants of environmentally responsible behavior) have been incorporated. Yet the educational goals presented in the environmental education literature since the late 1970s are remarkably consistent with the five categories of objectives that the Tbilisi Declaration identified for environmental education. Environmental education is our way to the future. While empowering individuals to restore and maintain the Earth s natural systems, it also supports the wellbeing of future generations by promoting sustainable lifestyles. This policy statement is designed to support effective environmental education programs in government schools in New South Wales. It provides guidelines on the management of school resources in accordance with ecologically sustainable practice and serves as a starting point for addressing global environmental issues. The first Environmental Education Curriculum Statement K-12 was released in 1989 and focused on students gaining a sense of personal responsibility for their own environment. Since then, the principle of ecologically sustainable development (ESD) has been internationally recognised and now places local actions in the context of global responsibility. In 1999, field studies centres were renamed environmental education centres (EECs) to reflect the broader role that environmental education is now playing in schools. This is vital to the development of environmentally aware and responsible citizens who will advocate for the environment in the future.

Amendments in curriculum

Schools should maximize every opportunity to develop students' capacity to support an ecologically sustainable world. Schools will be able to achieve the objectives of the *Environmental education policy for schools* in the context of key learning areas and subjects as they work to achieve the outcomes of syllabuses. In implementing this focus area of the policy, schools are expected to:

- Identify and address those outcomes which are specific to environmental education in syllabuses K-12 integrate the teaching of environmental education topics and issues to support outcomes in other syllabuses.

- Use the opportunities provided by special events and school community actions to enhance those student learning outcomes related to environmental education. Learning opportunities supporting the curriculum. Environmental education is best approached as an across-curriculum strategy integrated into teaching and learning programs from Kindergarten to Year 12.

This can occur

- Through study of the mandatory syllabuses which contain specific environmental education outcomes. These occur in such syllabuses as Human Society and Its Environment and Science and Technology in Years K-6; and Science, Geography, Personal Development, Health and Physical Education and Design and Technology in Years 7-10.
- By integrating environmental education into other subjects, such as English, Mathematics and the Creative Arts, where syllabus outcomes can be taught through environmental issues and topics. For example, the collecting and recording of data during a school environmental audit could support outcomes related to mathematical understandings and skills.
- By linking environmental education with other across-curriculum perspectives and policies such as Aboriginal Education, Gender Equity and Multicultural Education. For example, the implications of cultural heritage are important when studying issues of environmental management. Learning opportunities outside the classroom.

What is learnt inside the classroom about environmental education needs to be reinforced and supported by what happens outside the classroom. Sometimes even the classroom itself can be transferred to another location to enhance students' learning about environmental education. To support the curriculum objectives of environmental education, schools need to maximize the opportunities for student learning provided by all aspects of the school community. These opportunities include:

- Using special environmental events, days, celebrations and projects to complement learning in the curriculum
- Involving students in investigating, maintaining and improving the school and local environment
- Using the community to investigate practical and real-life situations.
- Incorporating outside programs and services into school programs to bring learning to life

- Utilising the facilities of environmental education centres and zoo education centres and participating in such programs as Landcare and Streamwatch.

All teachers have a role to play in supporting environmental education through the curriculum by

- Providing a learning environment which supports students as they develop an awareness, understanding and appreciation of the natural and built environments. These should be studied at local, national and global levels.
- Identifying opportunities to increase students' understanding of contemporary environmental issues, such as global warming.
- Giving special emphasis to local environmental problems (i.e. think globally, act locally).
- Providing opportunities for students to develop into effective and committed environmental citizens and advocates.
- Introducing students to environment-related career opportunities and supporting students as they pursue those pathways.

5. MANAGEMENT OF RESOURCES

Schools should manage resources according to the principles of ecologically sustainable development, i.e. "avoid and reduce, reuse and recycle", and minimising waste generation as much as possible. In implementing this focus area of the policy, schools are expected to develop a plan to:

- Address the management of energy, products, materials, waste and water.
- Employ best practice in the sustainable management of resources and comply with government regulations, laws and policies, such as the Waste Reduction and Purchasing Policy (WRAPP), stormwater legislation and the Litter Prevention Program.
- Maximise learning opportunities created by the school's management of resources to make links with the curriculum. The efficient management of resources within the school provides a range of benefits, including:
- Improvements to the school environment (e.g. reduction in litter and waste, improvements in health and safety).
- Cost savings (e.g. savings in energy and on waste and water bills).
- A sense of community and pride in the school (e.g. redesigning and rehabilitating the school grounds).

- Participatory democracy in the management of the school with respect to decisions that directly affect the students.
- Increased student confidence and skills in making decisions on environmental issues.
- Involvement of the local community, support from business and local publicity.
- A model for improved future behaviour on the part of students, community members and Organizations.

While water, electricity, products, materials and waste are integral components of the management of resources in a school, schools may focus on other issues, depending on their location, climate, history and context. These could include:

- Safety (e.g. toxic chemicals).
- Traffic (e.g. inside and outside the school).
- Environmental management strategies relating to the canteen (e.g. green canteens).
- Purchasing policy (e.g. packaging).
- Strategies for gaining the commitment of students.
- Use of natural light and renewable energy.
- Noise.
- Sustainable management of resources during construction and demolition.
- Watering systems (e.g. recycling and maintenance).

This policy provides schools with a new approach to environmental education through the development of a school environmental management plan. School environmental planning concurs with trends in industry and government, where environmental management systems (EMS) are increasingly being introduced in accordance with the International Standard ISO14001. The Standard requires industry and government organisations to adopt sustainable practices at a local level. This International Standard is accepted throughout Australia and is endorsed by most NSW government departments. A school environmental management plan is a tool to help schools plan and coordinate environmental education. The plan assists schools to achieve the objectives in the three focus areas:

- Curriculum.
- Management of resources.
- Management of school grounds.

All schools must develop their own school environmental management plan that works to a schedule and is implemented in stages. The school environmental management plan should:

- Be incorporated into the whole-school plan.
- Link school administration and management with curriculum plans.
- Be organised under the three focus areas.

The most successful school environmental management plans are those where the process of change involves:

- Active participation by students, staff (including teachers, general assistants, cleaners, office and canteen staff), parents, local community members, representatives from government and non-government agencies.
- A holistic perspective which employs an integrated systems approach to planning and includes the whole site, the whole school community and all aspects of the curriculum.
- A long-term vision encompassing continuing consideration of environmental management as part of a school's ongoing management plan. Once in place, the school environmental management plan will provide school leaders with an integrated approach to the environmental management of their schools as well as a rich source of learning opportunities in environmental education. Schools should evaluate and monitor the effectiveness of their school environmental management plan at regular intervals.

6. FUTURE PROSPECTIVE PLANS

The school environmental management plan Management of school grounds Adopting the principles of ecologically sustainable management to the built and natural environments, management of resources, assessing, reducing and monitoring school resources e.g. water, energy, products, materials and waste

- Integrating environmental education into the KLAs and subjects.
- Participating in special environmental events, days and programs.
- Using opportunities in the management of resources and school grounds as learning experiences in KLAs and subjects.

6. Evaluating, monitoring and reporting.

Evaluating, monitoring and reporting are fundamental and continuing aspects of implementing environmental education. Schools should evaluate the implementation of the environmental management plan in terms of the three focus areas, curriculum, management of school resources, and management of school grounds. The framework, "Stages in becoming an environmentally active school", provides a tool for evaluating and monitoring the implementation of environmental education in the school. The framework's main purpose

is to illustrate a sequence of stages that schools might pass through to become an environmentally responsible school. Schools can use the framework as a guide to help them assess and evaluate environmental education at different phases of its implementation. The framework also helps schools to move forward in the implementation of their environmental education policy. Schools may use the framework as:

- A starting point to assess where they stand in terms of their planning and implementation of environmental education.
- An indicator for monitoring improvement and progress in implementing environmental Education.
- A basis for summary evaluation at various points in the implementation of environmental Education.
- A guide for annual reporting.

No Lack of interest in Commitment to EE and environmental There is no commitment environmental issues are not considered consideration of the education (EE) at in T&L programs is in any school environmental impact of ancillary, teacher and low or non-existent. purchasing, resource use the use of the school executive level. Topics are taught in an or waste management. grounds. There is no ad-hoc and unplanned consideration given to way. No classroom using the school grounds programs in place to for EE.

SWOT analysis of EE

Individual teachers, Individual teachers Individual teachers Ad hoc landscaping of awareness ancillary and/or program for EE where promote EE activities school grounds takes executive are mandated by the in resource place. No long-term concerned about the syllabus. Some management. There is plans. Strategies for lack of support for EE environmental issues little executive support school grounds are based and wish to take action. may be discussed in for efforts towards only on such issues as Staff participates in an other subjects. “best practice” in equipment, shade, safety EE inservice. management of resources. and seating. Purchasing is adhoc and does not consider ecological sustainable development. A formal school EE is being taught in A subcommittee is School grounds Planning environmental the mandatory formed to conduct an subcommittee is formed. management syllabuses and, to some audit. The committee consists committee is extent, in other areas. of teaching and ancillary established and Subcommittee includes staff, along with students objectives determined. A subcommittee is teachers, ancillary staff, and community formed to conduct an students and

members. Committee structure audit. community members. includes ancillary staff The subcommittee and community considers student representatives. involvement in the Subcommittees are audit. Joint planning established. with external providers begins. Audits are under way. Specific concepts and Audit is under way and The subcommittee Early content are integrated provides information conducts an audit of implementation Policies and practices into particular KLA for developing the school grounds. begin to reflect the subjects and year strategies to reduce views promoted by the programs. the school's resource Students participate in EE committee. use and waste the auditing process. Opportunities for EE production. Students to be included in participate in the management of resources auditing process and management of school grounds are being explored. The subcommittee conducts an audit. Audits have been carried The audit identifies The audit has been Audit reveals relevant Consolidation out in all focus areas current EE requirements completed. environmental issues. and subcommittees of mandatory are developing action syllabuses and The subcommittee begins Subcommittee develops plans. opportunities to integrate to examine programs an action plan based on EE into other KLAs, and practices in the achievable objectives and the management management of resources of resources and school grounds. EE opportunities are explored. Action plans are being formulated. Most students An action plan is meet several environmental developed in purchasing, education objectives. resource use and waste management. Action plans have been The action plan has been The action plan has The action plan has been Further finalised in all focus areas passed on to the been passed on to the passed on to the consolidation and have been passed on to environment management environment management environment the school environment committee, prioritised and committee and has been management committee. integrated into the school prioritised and integrated committee and has been environmental into the school prioritised and integrated The environment management plan. environmental into the school management committee management plan. Environmental has integrated and Teaching and learning management plan. Prioritised the action programs are in place The school plans. in all stages to ensure environmental The school sequential development management plan is environmental A school environmental of environmental objectives being followed, management plan is in management plan has in mandatory syllabuses. purchasing is being place and strategies are been formulated and integrated and on-going progressively implemented. T&L programs in place data collection is used implemented. which articulate to evaluate the Evaluation and review opportunities to address effectiveness of the plan. structures are established all the EE objectives. The school staff, The school community

Opportunities for students and community is improving the grounds. environmental education members participate in Grounds are being used associated with special activities that exemplify as a teaching resource. Events, programs, "best practice". management of resources and school grounds are incorporated into T&L programs. Students meet most curriculum objectives successfully. The school shows The school has effective All objectives for Objectives relating to school Sustainability commitment to a school environmental education management of resources grounds are fully met. Environmental management integrated into all stages are achieved: purchasing, Management is consistent plan as part of the school and KLAs, where appropriate. resource use and waste with the principles of management plan. Effective The mandatory curriculum management are ecological sustainable action plans are in place is taught effectively and integrated across the development. Grounds and are regularly reviewed. opportunities are maximised whole school. "Best are developed to enhance Objectives for all focus for EE including special practice" is employed environmental education. areas are being met. events, special programs, and emphasising sustainability Progress is reported and the Progress is reported in management of resources of resources and minimal school environmental the school's annual report and school grounds. School environmental impact. management plan is reviewed demonstrates that it has Learning opportunities School community The school is a model for implemented programs that for students are demonstrates personal others to follow and a address all EE curriculum incorporated. Progress is commitment to the school logical and holistic plan is objectives. Programs are visible and is reported. grounds. The grounds evident. based on environmental The school's management are a diverse learning citizenship and personal action. of resources is an example environment that has positive Curriculum model is an for students and the impacts on local and inspiration for other schools. Broader community global environments and is to follow a model for others to follow.

7. CONCLUDATORY COMMENTS

Ideally, schools, as one of the societal systems responsible for the development of citizenry, should be charged with developing cognitive skills, across a variety of disciplines, to equip students with the ability to make responsible decisions. Business and industrial sources report the inability of many employees to think critically in job situations. The complexities of the modern world and our democratic society necessitate effective processing of information to determine a course of action. The ability to think critically is essential in a student's capacity to make choices and judgments of appropriate actions. As stated over

twenty years ago, we are at that point in time when rhetoric and opinion must be substantiated by consolidating existing research efforts and focusing future efforts ... we must now be about the business of validating the assumptions and utilizing a research base if EE is to continue to advance". Our review found that interdisciplinary-based research in EE is poorly represented in the literature. Some members of the national EE community alluded to the scarcity of such studies during phone interviews and e-mail correspondence. Candid comments by those interviewed included: "I'm doubtful you'll find anything like that out there," and "In my research, in a related area, I have not come across anything of this nature, despite looking for it." There are several possible explanations for a lack of research that reinforces the pedagogical strengths of EE. Among the possible reasons are: lack of funding and/or planning for program evaluation; difficulties incorporating assessments of problem-solving and critical-thinking skills into traditional school structures; lack of relevant case examples of interdisciplinary model programs; and most EE researchers are evaluating program outcomes related to environmental attitudes and behaviors rather than assessing general educational impacts of EE. Regarding funding and program planning, one of the comments heard repeatedly during phone interviews of EE program directors was, "I don't have the funding for evaluation." Just as "effective assessment should be integrated into instruction", so should effective evaluation be an integral part of any educational program. The decision-maker bases his actions on the unambiguous scientific findings provided by the researcher. Evaluation results drive decisions about on-going revision and necessitate examination of instructional design, curricular goals and the effectiveness of instructional methods. Measurement of student learning within interdisciplinary EE curriculum presents complications for traditional educators. Even with the recent movement toward authentic assessment it is difficult to evaluate students' abilities to investigate, evaluate, make decisions or demonstrate environmental action through standardized. At the same time, organizational conditions that engage students in critical analyses of environmental issues are generally not encouraged within traditional education systems. Teachers and administrators expect to maintain order and a competitive atmosphere rather than emphasizing the types of learning methods used in EE. Another reason it is difficult to find studies analyzing the use of cross- disciplinary EE content and methods may be that the educational structures in which they would successfully be integrated are virtually nonexistent. Until the educational systems are restructured to incorporate learning modeled by EE methods (e.g., thinking, problem-solving, hands-on activities and use of relevant subject matter), evaluation of its

effectiveness can't take place. There are apparently few pilot programs that have incorporated EE methods and content into traditional educational systems. At least, there is a scarcity of case examples describing these model programs, such as "environmental magnet schools". The focus of most EE researchers has not been on assessing the all-inclusive educational importance of EE methodology. Primarily, the evaluation projects in the field have centered on assessing student outcomes relating to environmental knowledge, attitudes and behaviors. We set out to find research evidence related to the effectiveness of EE as an educational tool. The motivation for this search was to locate documentation that demonstrated the educational efficacy of EE. We believe this research could then be used by the EE community to begin building a more effective dialog with the education community. This is the basis for helping to advance EE into a parallel position with other efforts in education reform. We had hoped to locate studies that demonstrated the influence of using EE content and/or methods on student learning in math, language arts, social studies, etc. Documentation focusing on this type of research would help answer questions such as: Do students learn to be better readers when the topic is animals, plants or other environmental content? Are students more motivated to learn about science while studying chemistry, math or physics, in pursuit of answers related to the environment? Answers to these and other questions, if responded to affirmatively, might help to promote the full integration of environmental content and methods across the curriculum. Perhaps, capitalizing on a child's "intrinsic interest" in the natural world and actively engaging that child in the educational process would create an enthusiastic learner for a lifetime. Environmental education is our way to the future. While empowering individuals to restore and maintain the Earth s natural systems, it also supports the wellbeing of future generations by promoting sustainable lifestyles.

8. GLOSSARY

Agenda 21

Adopted by the UN in 1992. It is UNCED's"blueprint for action to the 21st century". Notable for its extensive coverage of environment and development matters as inextricably linked issues. It deals with the social and economic dimensions of sustainable development, conservation and management of resources for development, strengthening the role of major stakeholder groups, including nongovernment organisations (NGOs), financial resources, technology transfer, education, training and public awareness. While it is merely a blueprint

that does not have the force of treaties, protocols or international agreements, it is nonetheless an important body of agreement acknowledged by virtually all national governments.

Assessment

The process of identifying, gathering and interpreting evidence about students'learning. Assessment provides information on students' achievement and progress. It assists in setting the direction for ongoing teaching and learning.

Civics

Reflects a country's social and political system. In Australia these systems include institutional and social structures, such as parliament, the constitution, political parties, lobby groups etc.

Citizenship

Is the participation of a person in his/her country's social and political systems. The person's attitudes, values and beliefs will influence the form of this participation.

Community

A social grouping whose members share space, government and social organisation. The community can refer to either a small group or a large population and may have a common culture and heritage. The term may also refer to a group of organisms, both plant and animal, living together in an ecologically related fashion in a defined region.

Earth Summit

The UN conference on environment and development held in Rio de Janeiro in June 1992. It evolved out of the UN's desire to formulate a "global agenda for change" that would include long-term strategies for achieving sustainable development. It stressed: the importance of greater cooperation among countries at different stages of economic and social development, taking account of the interrelationships between people, resources and the environment; and dealing more effectively with environmental concerns at the international level. The Rio Declaration, Agenda 21 and the Forests Statement were adopted at the conference.

Ecologically sustainable development (ESD)

Ecologically sustainable development is a pattern of activities which meet the needs of the current generation without prejudicing the ability of future generations to meet their needs. It

requires that there is no unreasonable depletion of any resource. There must be no significant damage to the environment, and there must be no significant decline in social stability.

Ecosystem

The plants and animals of an ecological community together with their environment, forming an interacting system of activities and functions regarded as a unit.

Enhanced greenhouse effect

A warming effect in the atmosphere surrounding the earth as a result of increasing levels of greenhouse gases in the atmosphere because of human activity.

Environmental cost accounting

Determining the monetary value of the environmental aspects of human activity.

Environmental education centres

Established by the Department of Education and Training as venues for students to participate in environmental activities. The environment provides the stimulus for across-curriculum activities. Formerly known as field studies centres.

Evaluation

The process of making judgements about the effectiveness of a teaching and learning program.

Interrelationships

The condition wherein two or more things relate to each other e.g. soil, vegetation and climate.

ISO14001

This is an international standard that specifies requirements for an environmental management system. The Standard enables an organisation to formulate a policy and set of objectives that take into account legislative requirements and information about significant environmental impacts. It applies to those environmental aspects that the organisation can control or over which it can have an influence. While schools are not expected to receive ISO14001 accreditation, the principles of an environmental management system can be modified to suit its needs and situation.

Learnscapes

"Places where a learning program has been designed to permit its users to interact with an environment. Learnscapes may be natural or built, interior or exterior. They may be in or near schools and should relate to one or more of the eight key learning areas". (The School Learnscapes Trust). See Support Document. Learnscapes are more effective if the school and its community design them with an emphasis on ecological sustainability, rather than relying on one person for long-term continuation and survival. The program is similar to the Learning Through Landscapes Program operating in the UK, where school grounds are rehabilitated, redesigned and used for specific learning activities.

Life cycle analysis

Examines the total environmental impact of products, processes and activities by quantifying their environmental effects along the life cycle, from extraction of raw materials through processing, manufacturing, transportation, selling, use and on to final disposal.

National Greenhouse Strategy

The Strategy developed through a coordinated effort between the Commonwealth, State and Territory Governments, provides a strategic direction for Australia's greenhouse response and is the primary mechanism through which our international commitments on climate change will be met.

Natural capital

This refers to the earth's natural resources and ecological systems that provide vital life support services to society and all living things. These services are of immense economic value; some are literally priceless, since they have no known substitute.

Environmental Education

plan to be tabled to each House of Parliament. The plan will influence and reflect the implementation of environmental education in schools.

Sustainability

Possessing the necessary resources to maintain or improve the current state of the environment.

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