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Education as a catalyst for sustainable development

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Abstract

Education plays vital role in the socio cultural and economic development of a country. A strong education system broadens access to opportunities, improves health, and bolsters the resilience of communities. It provides the skills people need to thrive in the new sustainable economy, working in areas such as renewable energy, smart agriculture, forest rehabilitation, the design of resource-efficient cities, and sound management of healthy ecosystems.

Education brings about a fundamental shift in how we think, act, and discharge our responsibilities toward people and nature. After all, while financial incentives, targeted policies, and technological innovation are needed to catalyse new ways of producing and consuming, they cannot reshape people's value systems so that they willingly uphold and advance the principles of sustainable development. Schools, however, can nurture a new generation of environmentally savvy citizens to support the transition to a prosperous and sustainable future.

Education provides the means by which one generation transfers the legacy to the next in the form of culture, values, knowledge, discoveries, innovations etc. Without inter-generational education, very little in a human context can be sustainable. Education is also important to formulate, challenge and disseminate ideas, knowledge, skills, and values within communities and between communities, nations, and continents. Education is identified as a key element of sustainability-focused strategies in many contexts and levels. The critical role of education has been reconfirmed in the formulation of the Sustainable Development Goals and the Global Action Programme on Education for Sustainable Development.

According to UNESCO Education for Sustainable Development includes key sustainable development issues into teaching and learning; for example, climate change, disaster risk reduction, biodiversity, poverty reduction, and sustainable consumption.

It also requires participatory teaching and learning methods that motivate and empower learners to change their behaviour and take action for sustainable development. Education for Sustainable Development consequently promotes competencies like critical thinking, imagining future scenarios and making decisions in a collaborative way.

Education for Sustainable Development requires far-reaching changes in the way education is often practised today.

This paper attempts to discuss issues such as importance of education in sustainable development, curriculum for sustainable development and pedagogical approaches in sustainable development.

Keywords: Education, curriculum, sustainable, economy, development

Introduction

The concept of sustainability emerged as a response to growing concern about the effects of human society on nature. The Brundtland Commission (officially the World Commission on Environment and Development) defined the concept of sustainable development in 1987 as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (Brundtland, 1987) ^[1]. This definition explains that while development may be necessary to meet human needs and improve the quality of life, it must occur without compromising the ability of the natural environment to meet current and future needs. The sustainability movement grew and campaigned on the basis that sustainability protects the interests of future generations as well as the Earth's ability to renew itself. It originally emphasized the environment in development policy, but since 2002 it has evolved to include social justice and poverty reduction as key principles of sustainable development. Quality education is an important tool to achieve a more sustainable world. This was emphasized at the UN Summit in Johannesburg in 2002, where the reorientation of

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current education systems was identified as a key factor in sustainable development. Education for sustainable development (ESD) promotes the development of knowledge, skills, understandings, values and actions necessary to create a sustainable world that ensures environmental protection and conservation, promotes social equity and promotes economic sustainability. The concept of sustainability arose largely from environmental education, which aims to develop the knowledge, skills, values, attitudes and behaviors of people to take care of their environment. ESD aims to empower people to make decisions and take action to improve the quality of life without endangering our planet. It also aims to integrate the values of sustainable development into all fields and levels of study.

ESD has a number of key themes and although the main focus is on environmental issues, themes such as poverty alleviation, citizenship, peace, ethics, responsibility in local and global contexts, democracy and governance, justice, human rights, gender equality are also addressed, corporate responsibility, natural resource management and biodiversity. It is generally accepted that certain characteristics are important for the successful implementation of education for sustainable development, reflecting the equal importance of both the learning and the results of the educational process (adapted from the UNESCO Nairobi Cluster "UN Decade for Sustainable Development", 2006). ESD should:

- Integrated into the curriculum in a multidisciplinary and comprehensive way, enabling an institutional approach to policy making.
- To share the values and principles of sustainable development.
- Promotes critical thinking, problem solving and action, all of which develop confidence to meet the challenges of sustainable development.
- Use different educational methods such as literature, art, drama and discussion to illustrate the processes.
- Enables students to participate in decisions about the structure and content of educational programs.
- Address local and global issues and avoid jargon.
- Look to the future and make sure the content has a long-term perspective and medium- or long-term planning.

To promote sustainable development, the UN General Assembly adopted the UN Decade of Education for Sustainable Development (2005-2014) with the United Nations Educational, Scientific and Cultural Organization (UNESCO) as the main promoter throughout. in the decade. The goal of the Decade is a global vision of "a world where everyone has the opportunity to benefit from quality education and learn the values, behaviors and lifestyles necessary for a sustainable future and positive social change".

The goal of the decade presented by UNESCO is to integrate the principles, values and practices of sustainable development into all areas of education and learning. It aims to encourage changes in behavior that create a more sustainable future. One of the most important aspects of DESD is the recognition that a large number of stakeholders from the government, private sector, civil society, non-governmental organizations and the public must be involved

in education supporting sustainable development.

Objectives of the paper

The objectives of this paper are:

1. To understand the importance of education in sustainable development
2. To analyse the relationship among environmental education, education for sustainable development and development education
3. To discuss curriculum for sustainable development
4. To identify pedagogical approaches in sustainable development.

Research methodology

This paper is descriptive and analytical in nature. It is purely based on secondary data. Data has been collected from different secondary sources such as articles, journals, books and online sources.

Importance of education in sustainable development

Education is an important tool that provides people with all kinds of knowledge and enables everyone to acquire the knowledge, skills, attitudes and values needed to shape a more sustainable future. One of the main focuses is educating the younger generation, developing a sense of responsibility for the environment. Because young people are the heart of future sustainable development, whether it is achieved or not - it all depends on them. Education for sustainable development can raise the mindset of young people by bringing out the idea of a sustainable lifestyle. This not only helps children to promote a sustainable lifestyle, but also allows them to be more socially responsible for the environment. Education is an important part of achieving sustainability. All over the world, societies are beginning to realize that current development trends are not sustainable, and general educational awareness through education is a key factor in moving towards sustainability in our increasingly globalized society. Education is considered one of the development goals with the highest return on investment in the long term.

Sustainable education is defined as a more holistic approach to education, with the vision of "creating a better world for all future generations of living beings". It's about learning what it takes to maintain and improve our quality of life. It enables people to develop the knowledge, values and skills to help make decisions about how we do things individually and collectively, locally and globally, improving the quality of life now without harming the planet in the future. Education for sustainable development (ESD) is the use of education as a tool to achieve sustainable development. Simply put, ESD is a way to make the world safer, healthier and more livable for us and future generations. Education for sustainable development (ESD) promotes the development of knowledge, skills, understandings, values and actions necessary to create a sustainable world that ensures environmental protection and conservation, promotes social equity and promotes economic sustainability. The concept of sustainable development was largely born from environmental education, which aims to develop the knowledge, skills, values, attitudes and behaviors of people to care for their environment. ESD aims to empower people to make decisions and take action to improve the quality of life without endangering our planet. It also aims to integrate the values of sustainable

development into all fields and levels of study.

ESD equips learners of all ages with the knowledge, skills, values and agency to address interconnected global challenges such as climate change, biodiversity loss, unsustainable resource use and inequality. It empowers learners of all ages to make informed decisions and take individual and collective action to change society and care for the planet. ESD is lifelong learning and an integral part of quality education. It reinforces the cognitive, socioemotional and behavioral dimensions of learning and includes both learning content and outcomes, pedagogy and the learning environment itself. Education for Sustainable Development (ESD) empowers learners to make informed decisions and take responsible actions for environmental integrity, economic viability and a just society for current and future generations. It is a comprehensive and transformative education where all people learn the values, behaviors and lifestyles necessary for a sustainable future and positive social change.

Education supporting sustainable development means including key issues of sustainable development in teaching and learning. For example, climate change, disaster risk reduction, biodiversity, poverty reduction and sustainable consumption. It also requires inclusive teaching and learning methods that encourage and empower students to change their behavior and act for sustainable development. Education for sustainability therefore promotes skills such as critical thinking, imagining future scenarios and collaborative decision-making.

Relationship between ESD, EE and DE

The relationship between environmental education, education for sustainable development and education for development is complex, and the three often have more similarities than differences. All three are fundamentally about changing behavior through education and promotion of values, attitudes and understanding. The core value promoted by these three sectors is respect: respect for oneself, respect for others, respect for the world and the planet. However, a closer examination of each sector suggests that each has a primary goal or focus that sets it apart from the others.

Environmental education began out of concern that human development has profoundly harmful effects on the natural environment, and its main goal is the protection and preservation of the environment, including habitats and ecosystems. The main purpose of development education is to reduce poverty, promote social justice and improve people's quality of life. It addresses basic human needs and combines local and global action.

Development education focuses on human interdependence and interconnectedness from both a global and local perspective, but does not traditionally extend this to the interdependence of ecosystems or specific environmental issues. DE mainly focuses on social issues such as human rights, social injustice, human poverty and global citizenship. It is the development of knowledge, understanding, skills, attitudes, values and behavior to enable people to critically examine the world, its development and act towards a more just and fairer place. It has much in common with other forms of social and political education (DCI, 2003). Human rights education, peace education, multicultural education, racial and ethnic education, environmental education, and finally civic

education have overlapping features and issues with development education, although each has its own characteristic and focus.

The main goal of sustainable development education is to improve people's quality of life without harming the environment. So, although all three "workouts" have much in common, they differ in their main purpose. The relationship between sustainable education and other fields of education is an ongoing debate, with the latter often considering sustainable education "part" of their education. Furthermore, what many consider to be the closest sector to education supporting sustainability - environmental education - does not qualify as sustainable education. Many believe that education for sustainable development should encompass all these educational fields to some extent, and as sustainable development becomes increasingly important in the context of politics and education, all these fields and their practitioners need to take a closer look at the common relationships.

Education for sustainability expands the social and human rights dimension in Germany and other education sectors and has a strong focus on the environment. ESD shares many similarities with Germany and deals with issues such as climate change, oil shortages, water pollution, the need to preserve biodiversity, and poverty reduction and human rights. ESD and DE also use similar methods including: critical thinking and problem solving, experiential learning, role plays, guided interpretation, discussion, forward thinking and participatory decision making. ESD also helps develop connections between people's lives locally and in developing countries, and encourages us to connect our actions at the local level to the needs and governance of the planet and its people.

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Quality education is an important tool to achieve a more sustainable world. This was emphasized at the UN Summit in Johannesburg in 2002, where the reorientation of current education systems was identified as a key factor in sustainable development. Education for sustainable development (ESD) promotes the development of knowledge, skills, understandings, values and actions necessary to create a sustainable world that ensures environmental protection and conservation, promotes social equity and promotes economic sustainability. The concept of sustainability arose largely from environmental education, which aims to develop the knowledge, skills, values, attitudes and behaviors of people to take care of their environment. ESD aims to empower people to make decisions and take action to improve the quality of life without endangering our planet. It also aims to integrate the values of sustainable development into all fields.

A sustainable curriculum would be transformative rather than transmissive because it aims to "equip all people with the knowledge, skills and understanding necessary to make decisions based on their environmental, social, cultural and economic impacts" (DEWHA, 2009), not care. the purpose is to provide information to students. It would not be specialized, content-based sustainability study units, but would be integrated across courses and units.

What does a sustainable curriculum look like?

Sustainability is a paradigm that requires teachers and students to examine our own values, implicit assumptions, motives, beliefs, and actions (Holdsworth, Wyborn, Bekessy, & Thomas, 2008). The curriculum should consider how we live and work and how this affects the environment, economy and other (social and cultural aspects) at local, regional, national and global levels. We create respect for our planet and what it offers us (resources, fauna and flora); protect and manage resources for current and future generations; to create respect for life in its diversity; use active, reflective, transformative and participatory learning strategies; use specific case studies from local, national or global examples; enable and stimulate discussion that brings different perspectives to students; to plan and foresee feasible solutions to complex problems instead of one and only way; considers the consequences of possible actions (social, economic, cultural and environmental) and takes responsibility for creating a sustainable future. Teaching and learning experiences and assessments may differ from current models. Lang (2007) ^[8] suggests that the ideal way to design and implement a sustainability curriculum is to incorporate the values and principles of sustainability into a whole-school approach that reorients the existing curriculum, rather than an additional subject. or major. an event This curriculum style is comprehensive and integrated.

There are many practical ways to design curricula to increase student engagement in thinking about these issues, solving problems, reflecting on their practices, and more. There are many examples of best practices in sustainable curricula at ECU, and this presentation aims to begin identifying, identifying and presenting some great ideas so that others can learn in ways that are appropriate for their own units and courses. Sustainability pedagogy encompasses all strategies that equip students with such decision-making skills and increase their understanding of environmental, social, cultural, economic and political perspectives.

Pedagogical approaches in ESD

There are many practical ways to design curricula to increase student engagement in thinking about these issues, solving problems, reflecting on their practices, and more. There are many examples of best practices in sustainable curricula at ECU, and this presentation aims to begin identifying, identifying and presenting some great ideas so that others can learn in ways that are appropriate for their own units and courses. Sustainability pedagogy encompasses all strategies that equip students with such decision-making skills and increase their understanding of environmental, social, cultural, economic and political perspectives. The approaches can be discussed as given below:

Critical reflection – including the more traditional lecture,

but also newer approaches such as reflexive accounts, learning journals, and discussion groups.

Systemic thinking and analysis – the use of real-world case studies and critical incidents, project-based learning, stimulus activities, and the use of the campus as a learning resource.

Participatory learning – with emphasis on group or peer learning, developing dialogue, experiential learning, action research/learning to act, and developing case studies with local community groups and business

Thinking creatively for future scenarios – by using role play, real-world inquiry, futures visioning, problem-based learning, and providing space for emergence.

Collaborative learning – including contributions from guest speakers, work-based learning, interdisciplinary/multidisciplinary working, and collaborative learning and co-inquiry.

The various pedagogical approaches for sustainable development are discussed below.

An Inquiry or Problem Solving Approach

In a sustainable curriculum, students are encouraged to ask questions. This can be very difficult and even time consuming in some lectures and tutorials. This style is not suitable for traditional informational lectures where information is emphasized. However, if students read selected materials before the lecture, they can participate in a guided discussion during the lecture or lesson. In addition to the materials provided by the lecturer, students can do their own literature searches before the lecture or tutorial to answer specific questions so that they can participate. For example, Blackboard's discussion board as a conversation tool. Students could be divided into subgroups by units with a large cohort. student could lead a discussion in the board and even evaluate participation. At the beginning of the inquiry, students ask questions about a related or perceived hypothetical problem. Students can examine the context, write their own learning outcomes, and follow their own lines of inquiry to investigate the problem. It can be planned as problem-based learning (PBL) tutorials or a combination of these methods.

This problem solving approach is used by students who participate in community-based workplace integrated learning and interact with the community to produce a useful product as part of the course evaluation. A sustainable curriculum asks questions like: Where does this product come from? How much compression does it use? Is it biodegradable? Is it poisonous? Is it produced and disposed of in an environmentally friendly way? Was it done in a way that cares for those who did it? Was it transported far? Do I really need this? What is the environmental impact of this product or process? Does it reduce consumption of water, energy, paper or gasoline? What is the impact of this product or process on the well-being of other people? All kinds of people? Here? Now? In the future? What is the financial cost? Now? Later? What is an environmental cost? What is social cost? Is there a better product or process?

Case Studies

Case studies that exemplify poor or good practices can be equally useful to demonstrate how products, processes and businesses could operate in sustainable ways. Case studies may be hypothetical or real, local or global.

Engaging with the Community or Partnerships Approach

In a sustainable curriculum, it is important to connect with the local, regional or global community to find relevance to topics of interest and problems that need to be solved. Again, this can be very difficult and time consuming, but it can also be very rewarding. In a sustainable curriculum, the focus shifts from the individual to the community. True partnerships can naturally emerge from students' chosen research interests.

Learning Outcomes and Assessment

Svanstrom, Lozano-Garcia, and Rowe (2009) provide examples of academic performance among university students. Successful completion of a sustainable social studies curriculum requires students to demonstrate the knowledge, skills and understanding necessary to make decisions based on their own environmental, social, cultural and economic impacts (DEWHA, 2009), and is therefore assessed on that basis. knowledge, skills and understanding. They would explain from multiple perspectives and justify those perspectives. They would demonstrate their ability to identify and solve problems of importance to the community.

Conclusion

There is no proven recipe for success in designing or redesigning a curriculum that integrates the principles of sustainability. Sustainability is a continuous learning-by-doing process that actively involves stakeholders in change (DEH, 2005). Desha, Hargroves, and Smith (2009) list three main phases or methods of curriculum reform: ad hoc inquiry initiated and led by staff; a flagship that is market driven; and an integrated approach that is institution driven. Many universities struggle with ways to teach engineering students about social sustainability because decision-making is complex and involves multiple technical, economic, environmental, social, and ethical constraints (El-Zein, Bowden, & Clarkeburn, understanding of the environment (DEH, 2005) would be an important addition to some units and courses. The principles of sustainable development can be a driving force for innovation and a tool for change. Much attention has been paid to curriculum change, pedagogy, and program content of the Sustainable Development Agenda (Holdsworth, Wyborn, Bekessy, & Thomas, 2008). ECU has values, vision, strategic priorities and a mission firmly grounded in sustainability principles and anecdotal evidence that academics support the agenda. They are a strong basis for the preparation of the curriculum to integrate the principles of sustainable development.

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