

# THE CRITICAL ROLES OF EDUCATION IN ACHIEVING SUSTAINABLE DEVELOPMENT

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## Abstract

Education is the prime driver of sustainable development. All aspects of education have critical roles to play in achieving sustainable development. The roles of the following aspects of education in sustainable development have been examined in this paper: Future education, Basic education, interdisciplinary and Re-orientation education, Student-centered education, Authentic education, Gender education, Citizenship education, Education for Culture of peace and Respect for Human Rights, Health education, Population education, Education for Protecting and Managing Natural Resources, Education for Sustainable Consumption, Adult and Community education, Technical and Vocational education, Higher education and Teacher education. It is recommended that all aspects of education be developed and employed for sustainable development in all countries.

## Introduction

Since 1992, an international consensus has emerged that achieving sustainable development is essentially a process of learning. The critical role of education was stressed at all the major United Nations conferences following Rio including those on human rights in Vienna in 1993, population and development in Cairo in 1994, small Island developing states in Barbados in 1994, social development in Copenhagen in 1995, women in Beijing in 1995, food security in Rome in 1996, and human settlements in Istanbul in 1996. Just as we had learnt to live unsustainably, we now need to learn our way out to learn how to live sustainably. Education for sustainable development is an emerging but dynamic concept that encompasses a new vision of education, which seeks to empower people of all ages to assume responsibility for creating a new sustainable future (Hopkins et al 1996).

Linking social, economic, political and environmental concerns is a crucial aspect of sustainable development. Creating such links demands a deeper, more ambitious way of thinking about education as one that retains a commitment to critical analysis while fostering creativity and innovations. In short, it demands that education promote a system of ethics and values that is sensitive to cultural dialogue, democratic decision-making and the appropriate use and management of natural resources. Seen as a social learning for sustainability, education can increase concern about sustainable practices and increase our capacity to confront and master change. Education not only informs people, it can change them. As a means for personal enlightenment and for cultural renewal, education is only central to sustainable development; it is humanity's best hope and most effective means in the quest to achieve it. (Scott and Gough, 2004).

## The Concept of Education for Sustainable Development (ESD)

Clarifying the concept of education for sustainable development was a major challenge for educators during the last decade. Some people argued that educating for sustainable development ran the risk of indoctrination, while others wondered whether asking schools to take a lead in the transition to sustainable development was asking too much of teachers.

Consequently, many international, regional, and national initiatives have contributed to an expanded and refined understanding of the meaning for sustainable development. For example, the Education International, the major umbrella group of teachers' unions and associations in the world, issued a declaration and action plan to promote sustainable development through education. Similarly, statements and guidelines were issued in support of reorienting education by regional councils of ministers of education and/or environment in the European Union, in Asian-Pacific Economic Cooperation (APEC), Organization of American States (OAS), and the South African Development Community (SADC) countries and the South Pacific.

Many regional strategies or action plans have been developed. A common call in all of these is the need for an integrated approach through all government ministries (e.g. education, health, environment, finance, agriculture, industry and consumer affairs etc) collaborates in developing a shared understanding of and commitment to policies, strategies and programmes of education for sustainable development. International conservation organizations, such as the World Wildlife Fund (WWF) and the International Union for Conservation (IUC) are also actively promoting the integration of education into sustainable development at local community, national and eco-regional scales. In addition, many individual governments have established committees, panels, advisory councils and curriculum development projects to discuss education for sustainable development, development policy and appropriate support structures, programmes and resources and fund local initiatives (Scout and Gough, 2004). These many initiatives illustrate that the international community now strongly believes that we need to foster through education, the values, behaviour, and lifestyle required for a sustainable future.

### **Future Education**

For thousands of years human societies have proved that living sustainably as healthy and happy individuals within caring, stable families and communities in harmony with the natural world is possible. The long-term sustainability of indigenous economic and cultural systems is the result of indigenous systems of education that established a human and natural ecology totally in union with each other. Unfortunately, indigenous knowledge and wisdom have been undermined by the experience of colonization, industrialization and globalization. By and large, indigenous priorities and systems of education have been supplanted by the somewhat narrow view that culture and the environment are valuable only in so far as they are economically productive. The consequent disregard for the land and culture has meant that knowledge, values and skills for living sustainably have been underplayed in contemporary education.

Future education, if it is true that all education is for the future, needs to become more explicit element in all levels of education. As education for sustainable development is education for a future that we cannot yet predict, it is important that education programmes seek to develop skills for understanding and anticipating change and for facing the future with courage and hope. This would involve coming to realize that the future is a human creation, made by our decisions, and that in a democratic society; people have the right, in deed an obligation, to contribute positively to a sustainable future. This would involve learning how to learn, how to analyze and solve complex problems, how to think creatively and critically about the future, and how to anticipate and make our histories. These contribute to the stall of foresight and are all aspects of future orientation in education.

Education for sustainable development has come to be seen as a process of learning how to make decisions that consider the long-term future of the economy, ecology and social well being of all communities. Building the capacity for such future-oriented thinking is a key task of education. This represents a new vision of education, one that helps students better understand the world in which they live, addressing the complexity and interconnectedness of problems, such as poverty, wasteful consumption, environmental degradation, urban decay, population growth, gender inequality, health, conflict, and the violation of human rights and threaten our future. This vision of education emphasizes a holistic, interdisciplinary approach to developing the knowledge and skills needed for a sustainable future, as well as changes in values, behaviour and lifestyles. This requires us to reorient education systems, policies and practices in order to empower everyone, young and old, to make decisions and act in culturally appropriate and locally relevant ways to redress the problems that threaten our common future. In this way, people of all ages can become empowered to develop and evaluate alternative visions of a sustainable future, and to fulfill these visions through working creatively with others.

This vision emphasizes the key role of educators as agents of change. There are over 60 million teachers in the world and each one is a key agent for bringing about the changes in lifestyles and systems that we need but education is not confined to the classroom of formal education. As an approach to social living, education for sustainable development also encompasses the wide range of learning activities in a basic and post-basic education, technical and vocational training, tertiary education, and both non formal and informal learning by both young people and adults within

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their families, workplaces, and in the wider community. This means that all of us have important roles to play as both “learner” and “teachers” in advancing sustainable development. (Eneh, 2009).

#### **Basic Education**

Basic education provides the foundation for all future education and is a contribution to sustainable development in its own right. Its goal, as concerns those in the pre-school and primary school-age population, whether enrolled in school or not, is to produce children who are happy with themselves and with others, who find learning exciting and develop inquiring minds, who begin to build upon as storehouse of knowledge about the world and more importantly, an approach to seeking knowledge that they can use and develop throughout their lives. Basic education is also integral to lifelong learning especially in increasing the level of adult literacy. Basic education is aimed at all the essential goals of education: learning to know, to do, to be (that is to assume one’s duties and responsibilities) and to live together with others, as outlined in Education. “The Treasure Within,” the Independent Commission on Education for the 21<sup>st</sup> century report, published in 1996 by (United Nations Educational Scientific and Cultural Organization (UNESCO) is thus not only the foundation for lifelong learning but also the foundation for sustainable development.

Access to basic education is a major requirement for poverty eradication. Indeed, poverty cannot be eradicated without education. However, 110 million 6-11 year-old still do not attend primary school. Millions more attend only briefly often for a year or less then leave without the most essential elements of a basic education or the skills to make their way in an increasingly complex and knowledge-based world. These will join the nearly 900 million adults, the majority of whom are women, who cannot read. Those denied an education suffer enormous social and economic disadvantage. They are amongst those with the poorest health, lowest housing standards, and poorest employment prospects in the world. In fact, they have less of nearly everything in life, except children. In Peru, for example, women with ten or more years of education have an average of 3:2 children, whereas women with no education have an average of 7:4 children. In other countries, the difference is less extreme, but still sizeable. Nearly everywhere, higher levels of education, especially for girls and women, reduces the average size of families, while contributing to the health, well-being and education of children.

In 2000, a world Education Forum was held in Dakar, Senegal to develop ways of achieving basic education for all. Six goals are central in the resultant Dakar framework For Action:

1. Expand and improve comprehensive early childhood care and education, especially for the most vulnerable and disadvantaged children;
2. Ensure that by 2015 all children, particularly girls, children in difficult circumstances and those belonging to ethnic minorities have access to and complete free and compulsory primary education of good quality;
3. Ensure that the learning needs of all young people are met through equitable access to appropriate learning and life-skill programmes;
4. Achieve a 50 percent improvement in levels of adult literacy by 2015, especially for women as well as equitable access to basic and continuing education for adults;
5. Eliminate gender disparities in primary and secondary education by 2005, and achieve gender equality by 2015, with a focus on ensuring full and equal access to and achievement in basic education of good quality;
6. Improve all aspects of the quality of education and ensure excellence of all, so that recognized and measurable learning outcomes are achieved by all, especially in literacy, numeracy and essential life skills.

These goals make the links between basic education very clear. Indeed, the Dakar framework for Action states: Education is the key to sustainable development and peace and stability with and among countries, and thus an indispensable means for effective participation in the societies and economies of the twenty-first century (Clover et al 2000).

#### **Interdisciplinary and Reorientation Education**

There is the need to re-orient many existing education policies, programmes, and practices so that they build the concepts, skills, motivation and commitment needed for sustainable development. Re-orientation Education addresses the re-orientation of educational systems in terms of how to

prepare people for life, for job security, for the demand of a rapidly changing society, for technological changes that now directly or indirectly affect every part of life and ultimately for the quest for happiness, well being and quality of life.

Core themes and key lesson are identified for re-orienting education policies, programmes and practices towards sustainable development. These include interdisciplinary student centered learning, and an emphasis on future education, citizenship education, education for a culture of peace, gender equality and respect for human rights, population education, health education for protecting and managing the natural resource base economic and social development, and education for sustainable consumption.

Interdisciplinary and Reorientation Education for sustainability requires us to work increasingly at the interface of disciplines in order to address the complex problems of today's world. What people will need to know in ten, fifteen, thirty and sixty years cannot be reliably predicted. It is predictable, however that such developments will not fit neatly into the disciplinary boundaries that have been in place for more than a century. Hence, understanding and solving complex problems is likely to require intensified co-operation among scientific fields, as well as between pure and mathematical sciences and the social sciences, arts and the humanities. Reorienting education to sustainable development will, in short, require important, even dramatic, changes in the way we think of knowledge (Eneh and Owo, 2008).

### **Student-Centered Education**

Student-centered education provide for learning participation in the decision that affect their lives is a key element in the United Nations Conventions on the Rights of the Child. Learning how to participate requires that children and young people have opportunities, within the safety of a learning environment, to practice decision-making. This may be done through curriculum and assessment policies that encourage the development of self-esteem and personal responsibility, and of skills for learning how to learn. For critical thinking and for active participation, space needs to be left in the curriculum for students to plan their own learning goals and methods, as and when appropriate, and for self-and peer-assessment (Sterling, 2001).

### **Authentic Education**

Authentic education is resource-based teaching enquiry and discovering learning, values clarification and analysis, problem-based learning, simulation games and role-play, and learning through community problem solving. It is student-oriented approach to learning that needs to be encouraged. Such an approach encourages authentic or "deep learning" rather than "shallow learning" of rote recall memorization for examinations. Authentic learning relates to everybody issues and future concerns. It proceeds at the pace at which individuals learn well rather than imposed schedules and standards. Authentic education engages the "whole person", body, mind, and spirit in the learning process and creates enthusiasm, insight and reflection, as well as compassion, energy and a commitment to working individually and with others to build a sustainable future (Scott and Gough, 2003).

### **Gender Education**

This provides education for gender equality. Women have been and remain the deciding influence on the quality of life and well being for their families and communities. In most cultures, they are the primary-caregivers and managers of natural resources, including food, shelter and the consumption of goods. In addition, women have jobs and careers. But, the general failure to provide equal opportunities for women to pursue education and economic self-sufficiency has meant that a disproportionate number of women are poor and marginalized. These social barriers-exclusion, low status and poverty- are also barrier to a sustainable future.

These facts make the education of girls and women a priority for sustainable development. It also means that all people male and female need to learn about the issues of gender and sustainable development, and to learn within environments that are sensitive to the learning needs and styles of both males and females. Curriculum materials aimed at promoting such understanding are being produced in most countries. Education systems and schools are also developing policies that promote gender quality within educational processes, while teacher education programmes are drawing

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attention to the importance of including a gender perspective in all subject areas. UNESCO, national governments and many organizations are also seeking to advance the participation of girls in science, mathematics, and information and communication technologies. These are important beginnings in the process of promoting gender equality in and through education (Scott and Gough, 2003).

### **Citizenship Education**

Citizenship education provides education for democratic societies, informed and active citizenship. It is a primary objective of educating for a sustainable future. Around the world, efforts are being made to integrate citizenship objectives into the formal curriculum. This has involved the promotion of content themes as well as teaching, learning and assessment processes that emphasize values, ethical motivation and ability to work with others to help build a sustainable future. The global spread of democracy has expanded electoral enfranchisement and meant that adult education for citizenship is also expanding.

A key aspect of citizenship education within the context of sustainable development is international understanding. This helps bring understanding of the links between local and global issues. It also means that young people can be given opportunities to examine their own cultural values and beliefs, to appreciate the similarities between people everywhere, to understand the global contexts of their lives to develop skills that will enable them to combat prejudice and discrimination. In these ways, students can use their knowledge, skills and commitments to plan an active role in the global community (Baker, 2006).

### **Education for Culture of Peace and Respect for Human Rights**

A key pillar of education is learning how to live together in peace and harmony. This involves, first, strengthening one's own identity, self-worth, and self-confidence and then learning to appreciate the culture of others, to respect others as individuals and groups and to apply the same ethical principles to decisions about other people that one would apply within one's own culture (Baker, 2006).

### **Health Education**

A child's ability to attain her or his full potential is directly related to the synergistic effect of good health, good nutrition and appropriate education. Good health and good education are not only ends in themselves but also means, which provide individuals with the chance to lead productive and satisfying lives. School health is an investment in a country's future and in the capacity of its people to thrive economically as individuals and as society. Thus, good health and nutrition are both essential; inputs and important outcomes of basic education. Children must be healthy and well-nourished in order to fully participate in education and gain its maximum benefits. Early childhood care programmes and primary schools that improve children's health and nutrition can enhance the learning and educational outcomes of school children especially girls and thus for the next generation of children as well. In addition, a healthy, safe and secure school environment can help protect children from health hazards, abuse and exclusion. A healthy population and safe environment are important pre-conditions for a sustainable future (Soubbotina, 2004).

### **Population Education**

Population education plays a vital role in the quest to ensure that the basic needs and well being of all the world's people are met. This is also the ultimate goal of population policies. Sustainable development, above all else, requires new ways of thinking and acting. Within the context, the relationship between education and population needs to be seen in the broader context of the struggle to overcome poverty, to promote justice and equity and to ensure respect of the environment and the right of future generations to live healthy and fulfilling life (Baker, 2006).

### **Education for Protecting and Managing Natural Resources**

Education, in all its forms can make a major contribution to protecting ecosystem and integrating natural resource management and energy conservation through promoting awareness, knowledge skills, values and action objectives. Biodiversity education is well served by many Non-Governmental Organizations (NGOs) concerned for local and global ecosystems. Many energy

producers have developed Energy education programme that integrate social and environmental issues into broader lesson about the physics of electricity, alternative and renewable energy sources. Water is the most precious hence water must be significant theme in education for sustainable development. Governments, water authorities, conservation NGOs and Community-Based Organizations (CBOs) have all played prominent roles in establishing action-oriented water quality action project that links school with their local communities and environment (Soubotina, 2004).

### **Education for Sustainable Consumption**

Consumption lies at the heart of the debate about sustainable development, as it covers people's right to live and work in a clean environment with good health and social conditions. However, sustainable consumption and sustainable lifestyle depend on context and culture. For example in developed countries, major changes are needed to reduce the impact of consumption, whereas in developing countries, consumption levels may need to rise in the interests of global quality, otherwise, the basic human needs for food, water, housing, education, health and transportation for the people who lives in developing countries may not be met (Baker, 2006).

### **Adult and Community Education**

Action towards sustainable development ultimately depends on public awareness, understanding, and support. In democratic societies, public policy responds to the will of the people. It is here that public awareness and understanding of the need for sustainable development counts. It expresses itself through support for law, regulations and policies favourable to the environment. Consequently, there is need to move beyond awareness raising and to engage people critically creatively in their own communities in planning and engaging in action for socially just and ecologically sound development at the local level. (Baker, 2006).

### **Technical and Vocational Education (TVE)**

TVE is vital to two of the most urgent human resources problems facing global society. These are development of appropriate skills for sustainable development and addressing the high levels of unemployment and under-employment in many countries. TVE trains technicians who operates at the interface of nature, technology, economy and society and have a key role to play in helping society resolve environmental and development issues. They tackle challenges, such as re-orienting technology and managing risks, meeting essential needs (such as food, water and sanitation) and at the same time, conserving natural resources and reducing energy and resource consumption. Technicians, who are aware of and have acquired practical skills for sustainable development, can ultimately apply more sustainable practices, as they are the ones who are involved in production.

Recognizing the crucial role of TVE graduates in devising and implementing practical solutions to problems, such as environmental degradation, the UNESCO international congress on Technical and Vocational Education stressed that TVE systems should not only focus on economic dimensions, but should also incorporate emerging issues, such as use of environmentally sound technology. The popular economy has become the main vector for productive activity for the majority of the world's poor, especially those living in the world's rapidly expanding cities. It represents the last resort against extreme poverty, youth unemployment, and social exclusion, and is made up of a multitude of small businesses, often family-run but also of individual activities run by women and youth. Jobs vary greatly and include recycling discarded household equipment, repairing machines, sewing, selling, transporting water, making craft goods, and operating market stalls. To contribute effectively to sustainable development, TVE also needs to address training needs for these jobs (UNESCO, 2005).

### **Higher Education**

Higher education has a crucial role to play in sustainable development. In the decade since the earth summit, many higher educational institutions worldwide have made significant efforts to incorporate sustainable development into academic programmes, research community outreach, and their management operations. Universities can also render a valuable service by integrating components of sustainable development into their outreach programmes for teachers, senior managers, and local leaders, such as mayors, parliamentarians, and others in leadership positions.

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They can also play a key role in international co-operation, and perhaps, could do so more effectively if they gave fuller consideration to developed and under-developed countries research partnerships to conduct interdisciplinary inquiries into environmental and development issues (Baker, 2006).

### **Teacher Education**

There are over 60 million teachers in the world, and every one is potentially a key agent for bringing about changes in value and lifestyles needed for sustainable development. Consequently, innovative teacher education is needed to tap this potential (OECD/DAC, 2006). The administration and facilities of teacher education have the potential to bring about tremendous change, because they create education curriculum, train new teachers, provide professional development for practicing teachers, consult with local schools, and often provide expert opinion to regional and national ministries of education.

Key initiatives around the world to promote teacher education for sustainability over the past decade include:

- A Toolbox in-service education project conducted by the National Consortium for environmental Education and Training in the United States;
- Diverse initiatives in the United Kingdom (UK) sponsored by the WWF, forum for the future, the UK panel on Sustainable Development, and several local education authorities;
- The Environmental Education Initiative in Teacher Education in Europe;
- The UNESCO learning for a sustainable Environment. Innovation in Teacher Education Project in Asia and the Pacific;
- A professional development programme for over 70 teacher education colleges in the province of Karnataka in India;
- A network of teacher education and resource centers in China sponsored by the WWF;
- A national education programme in New Zealand that has trained over 40 people to provide in-service training for teachers in their regions;
- A national education programme in South Africa that has appointed and coordinated in each province, established a range of curriculum and resource development projects, and is developing a national structure for the accreditation of teachers who complete the courses;
- An international network of some 50 teacher education institutions, each of which is conducting a project to reorient all or part of its pre-service curriculum towards sustainability, facilitated by the UNESCO Chair for the Reorientation of Teacher Training to Address sustainability at York University (Canada);
- The on-line and CD-ROM based multimedia teacher education programme, Teaching and Learning for a sustainable Future, developed by UNESCO as a demonstration project for adaptation and transactions to suit local educational cultural contexts (OECD/DAC, 2006).

### **Conclusion**

Education is the prime mover of sustainable development. No single aspect of education alone can drive sustainable development; various aspects of education must be combined to drive sustainable development. The critical roles of the various aspects of education in sustainable development have been examined in this review paper, which highlights: Future education, Basic education, Interdisciplinary and Re-orientation education, Student-centered education, Authentic education, Gender education, Citizenship education, Education for Culture of Peace and Respect for Human Rights, Health education, Population education, Education for Protecting and Managing Natural Resources, Education for Sustainable Consumption, Adult and Community education, Technical and Vocational education, Higher education, and Teacher education. The level they are given a chance, the higher the chances for sustainable development in the country and indeed the globe.

### **Recommendation**

It is, therefore, recommended that all aspects of education should be developed and employed for sustainable development in all countries.

## References

- Baker, S. (2006), *Sustainable Development*, New York; Routledge.
- Clover, D.S.; Follen F. & B. Hall (2000), *The nature of transformation: environmental adult education*, 2ed, Toronto: University of Toronto Press.
- Eneh, A.N. (2009). Education for sustainable development. *Sustainable human development review*, Vol.1 (1): 141-151.
- Eneh, O. C. & Owo, N.J.(2008), Sustainable Development – A review, *International Journal of Development Studies*, Vol.3 (3): 100-103
- Hopkins, C.; Damalamian, J.; Lopez F. & Opine, G. (1996), Evolving towards education for sustainable development: an international perspective, *Nature and resources*, 32(3): 2-11.
- OECD/DAC (2006). The challenges of capacity building: Working towards good practice, *Paris*, Vol.34 (2007): 12
- Scott, W. & Gough, S. (2003). *Sustainable development and learning*; London: Routledge Falmer.
- Soubbotina, P.T. (2004), *Beyond economic growth: An introduction to sustainable development*, 2ed. Washington D.C.: The International Bank for Reconstruction and Development/World Bank.
- Sterling, S. (2001). *Sustainable education*, Totnes: Green Books.
- UNESCO (2003). Sustainable development: an evolving concept, UN decade for sustainable development 2005-2014 draft international implementation scheme.
- UNESCO (2005). UN decade for sustainable development, UN decade for sustainable development 2005-2014 Draft international implementation scheme.