Higher education, a resource for sustainability

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Abstract

Today, we consider the incorporation of sustainability into the higher educational system as being of great significance within Universities. The decade of UNESCO’s Education for Sustainable Development emphasises this significance. Our paper analyzes certain obstacles to sustainable development: the complexity of environmental issues, the limits of technological, legal and economic solutions, and the lack of a proper education of the consumer, the absence or the limitation of the information or better said the lack of the processing and understanding capacity of the concept of sustainability. We analyze the contributions of some universities meant to overcome these obstacles, especially by involving them into certain programs for responsibility, by improving the curricula, by changing the consumer’s behaviour, and also by restructuring his learning experiences. By comparison to basic education, the academic education is supposed to play a more important role in the promotion of Education for Sustainable Development, because the in-depth problems of this decade are to be coped with by university research and education.

Our conclusion: higher education is an important resource for sustainability.

Keywords
Higher education, sustainability, holistic approach, transdisciplinarity, knowledge-based society, environment

Introduction

Today, we are living in a globalizing world, where everything is connected. Over the last two decades, information technologies and the Internet have been transforming the way companies do business, the way students learn, the way scientists carry out research and the way in which governments provide services to their citizens and vice versa. The wellbeing of present generations and likely the survival of the future generations will greatly depend on how the global human community will respond to the present environmental, social and economic challenges.

The growing expectations for personal comfort in the developed countries have led to consumption patterns that are unsustainable, degrading the global resources and the quality of the physical and social environment. The only viable solution to all these is sustainability. Practically, sustainability can be achieved if all the consumers will make choices to conserve, to minimise damage upon nature and to get maximum benefit.

What do the world needs in order to achieve these goals? Well, the answer would be an enhanced understanding of the principles, values and ethics that underlie sustainability. A shift to sustainability requires a change in culture as well as in language and thinking (Newman, 2003) for which education is crucial. Sustainable development calls for comprehensive change in the way society and thus education operates. An ecologically responsible way of production and consumption, a broader view on all matters traditionally described as strictly environmental, is currently variously re-defined and redescribed. Sustainability is not perceived as a concrete, stable notion, but mainly as a process of change in the relationships between social, economic and natural systems and processes. We claim that sustainability is mainly a moral issue, a moral command according to which cultural differentiations and traditional knowledge must be acceptable and respected.

The power of education in supporting this new developmental human activity should not be neglected. The connection of traditional Environmental Education with economy and society, through
an evolutionary frame of continuous transformation towards Education for Sustainability is a key element.

To understand the dynamics of globalization and its implication for the university, the educational role of the universities should be underlined. Institutions of higher education play an important role in the achievement of sustainable development (SD) through their educational and scientific function. In this respect, a proper understanding of the concept of SD may be an important condition in order to develop adequate education and research programmes. In the very beginning it is necessary to discuss and decide what type of model is “proper” for SD education, what difficulties exist in implementing such educational programmes and what issues should receive priority in the programme. Theoretical arguments appear, questioning whether economic issues should receive priority over social issues, or the social issues should receive priority over environmental issues. Another fundamental problem is that issues which are of less direct interest to the student are often excluded from study programmes or neglected. Consequently, a task for sustainable development education is to stimulate awareness and knowledge creation in these fields.

1. Knowledge-based society and higher education

The 21st century, will undoubtedly change the structure of society, and turn out to be a century of knowledge-based society, where knowledge is the most wanted good. The foundations of the new emerging society can be best described as based on knowledge. The change of society from industrial through post-industrial to a society based on knowledge is an evolutionary process. Knowledge is a substitute for all production factors and social progress. Some authors consider that a society based on knowledge is characterized by openness and intellectual courage, this type of society believes in its abilities and uses them in an innovative way.

Knowledge seems to be indispensable for modern society and its production processes, and also for the sustaining social conditions, for social integration, and at the same time, seen from a different point of view, we may say that knowledge is the primary source of problems and conflicts of the modern society. Going even further, we dare to say that the evolution of mankind, along centuries, was the preparation for this information society.

Knowledge is best interpreted when it is not only processed by the brain but also by the emotions and body, by the head and the heart. This goes beyond knowing and involves the development of understanding. In his respect, teaching and learning to know, means integrating different methodologies, disciplines and knowledge frameworks in a process of acknowledging and understanding the real world. It includes a greater understanding of the intellectual knowledge. This is particularly important for sustainability where we have respect for local knowledge and tradition, things that are crucial to the achievement of sustainability at any level.

In order to verify the relationship between knowledge society and sustainability, we must take into consideration the difference between these two terms. Since, knowledge society is based on the agglomeration of eco-knowledge, environmental-knowledge and social-knowledge it may be evaluated as the complex knowledge of quality of life support systems. Generally, every life support system requires knowledge about its structure, efficiency, operation and maintenance. The mutual relation between knowledge and sustainability reveals the possibility of anticipating the knowledge society as a sustainability paradigm. As shown on Figure 1 the knowledge society is organized as the equity between the knowledge and sustainability index.
These are structured with economic knowledge, environmental knowledge and social knowledge of the system. The Sustainability Index is composed of economic indicators, environmental indicators and social indicators as the basic indicators of sustainability, including material intensity, energy intensity, water consumption, toxic emission and pollutant emission. (Afgen, Carvalho. 2010)

A society based on knowledge demands the revaluation of many paradigms connected with the role of education in the development of culture, ideas and technology. According to many scholars achieving intellectual success in future is going to be based on the use of an inter-disciplinary and holistic approach to science. A society based on knowledge also means, that knowledge becomes more and more a desirable good. This increasing demand for knowledge creates a challenge for universities and other equivalent institutions of higher education, especially in the field of sustainable development. Despite of the growing number of higher education institutions in Romania there is a lack of the standardization of the educational program for sustainable development. Education must be reoriented to include the changes needed to promote sustainable development.

2. Higher Education and the Challenges of Sustainability

Education for Sustainable Development can be defined as the learning which needs to maintain and improve our quality of life and the quality of life for future generations to come. It is about equipping individuals, communities, groups, businesses and government to live and act sustainable as well as giving them an understanding of the environmental, social and economic issues involved (Bor et al., 1999; Borys, 2006). In the language of sustainable development, natural resources including biodiversity, the natural capital of the planet, should not be used or exploited in such degree or way that does not allow natural renewal and reproduction. The definition of the environment as an holistic frame consists of complex procedures at the level both of social and ethnic identities as well as at the level of environmental, developmental and educational strategies.

The Johannesburg Summit broadened the vision of sustainable development and re-affirmed the educational objectives of the Millennium Development Goals and the Education for All. The Summit proposed the Decade of Education for Sustainable Development and the United Nations General Assembly in its 57th Session in December 2002, proclaimed the Decade of Education for Sustainable Development (DESD) for the period 2005 – 2014. The overall goal of the DESD is to integrate he principles, values, and practices of sustainable development into all aspects of education and learning. This educational effort will encourage changes in behaviour that will create a more sustainable future in terms of environmental integrity, economic viability, and a just society for
present and future generations. Through education tomorrow’s citizens are being prepared, so as to become able to participate in organizations taking part in decision making regarding environmental matters. Its main purpose is the development of judgment in citizens with the aim of enabling them to deal with specific practical situations.

The main challenges of sustainable education are:

- To integrate sustainable science and education,
- To strengthen co-ordination and collaboration between different levels of education for sustainable development,
- To transform information and knowledge gaps between different parts of the world.

Education for sustainability should incorporate social and developmental education aiming to support educational at local, national and global level which is concerned with:

- Knowledge of natural procedure;
- Knowledge of integrated management of natural resources aiming to the preservation of the environment;
- Support of social values such as, participation, coherence solidarity, justice and multiculturality.

Education for Sustainability is a process of learning, a procedure for creating meanings and knowledge on the concepts of respect, protection, rational evaluation, quality of life, safety, self-knowledge, self-esteem, responsibility and active participation at locally and at a nationwide level.

Universities need to play an important role in the context of environmental education (EE) and generally in Education for Sustainable Development (ESD). This requires the readjustment of their structures to educational, methodological, and research frames as well to interdisciplinary programs with environmental orientation that should be integrated in their programmes.

Among others, the pillars of education for sustainability are represented by the variety of units that the academic curricula offers and the way they are taught. Students should have the right to choose and select the material with which they can associate and for which they can develop strong feelings. Units such as Ecologically Sustainable Development, Environment Conservation and Sustainable Urban Design allow the development of sense of place and association with the local environment. Through such experiences, the academic methods, concepts and theories are translated into learning tools and ways to acquire knowledge and understand the world.

This brings new challenges for the university communities, and leads us to several fundamental questions such as:

- How to implement sustainable development within and outside universities?
- What is the role and place of the universities in a globalizing world?
- How can universities come across new challenges and expectations in the 21st century?
- What are the limits of the transfer of knowledge?
- How should universities transfer knowledge to society and at the same time implement sustainable development?

Challenges and solutions towards sustainability are deliberated upon in a constant cycle of reflection and action that is inclusive of all relevant actors. Teaching and learning to do all these require the ability to relinquish power, a desire to realise the empowerment of others. It also involves being able to dream and to envision not only on a personal level but also in a collective.

3. Transdisciplinary approach to sustainability

Teaching and learning to do sustainability require ability to research, understand and relate in a transdisciplinary manner. This includes the capacity to facilitate collective participation, collaboration and coordination between the institutions of society. „An education in sustainability increases awareness of the complexity and interrelationships of environmental, economic, social, political and technical systems and also increases respect for the diversity of voice that exists amongst cultures, race, religion, ethnic groups, geographic and intergenerational populations”. (Wheeler & Byrne, p. 26, 2003). Thus we need not only tolerance and respect for other cultures, colours, religions, genders, opinions, but the creation of a universal understanding of shared values and ethics needed for inter-species and inter-generational global justice, equity and peace, for the higher purpose interpretations of sustainability. A critical consciousness that recognises the existence of inequalities of human society is needed in addition to the recognition of the interrelatedness of all elements on the
planet. This complexity and diversity in the world requires knowledge and skills by citizens, professionals and leaders that cross the boundaries of disciplines and institutions, cultures and realities of society.

Transdisciplinarity is a growing field of education and research that holds great potential to make an important contribution to a sustainable change. Sustainability is a framework of principles, a philosophy of practice that engages multi-levels, places and cultures in a systematic approach towards better environmental and social health whilst simultaneously allowing the economic improvement that this may require. Sustainability emphasises the importance of the local, of knowledge and action, but relates this to a broader global perspective in which interrelationships are recognised.

Transdisciplinarity in universities is necessary for the realisation of global sustainability. Any education system which is built upon the approaches of the previous century, confined only to the boundaries of a disciplinary perspective, will not be able to meet the requirements of sustainability. Nicolescu (1997) recommends that universities should have one transdisciplinary department and then every other department of the university should devote 10% of its time to transdisciplinary work. This is particularly relevant to sustainability. This one transdisciplinary department could act as a centre in a network of disciplines and could have a better understanding of transdisciplinarity for sustainability. This would mean that teaching and learning sustainability would rise above the disciplinary framework, allowing a more rapid transition, which would also feed individual disciplines.

**Conclusions**

Transdisciplinarity and sustainability both remain fairly recent conceptual and methodological frameworks. Some academics find the concept too abstract and broad and generally confine interpretation to their individual disciplines. Agenda 21 declared that: "To be effective, sustainable development education should deal with the dynamics of the physical, biological, social, economic, and spiritual environment. Information regarding all of these aspects should be integrated into all disciplines" (Sitarz, 1993:293).

The Talloires and Kyoto Declarations, the Copernicus University Charter for Sustainable Development and other international statements have gathered global consensus on higher education for sustainability. This consensus is based around the promotion of sustainability in all disciplines; research on sustainability issues; the greening of university operations; engaging in academic cooperation; forming partnerships with government, NGOs and industry; and the moral obligation of universities towards sustainability (Corcoran, et al., 2002; Calder & Clugston, 2003).

The most important challenge for universities is to adjust their structure for new expectations in the 21st century, and at the same time implement sustainable development. That can be done by creating a new kind of a global unlimited network, which would unable information flow and movement of people. To fulfil this mission there is a need for:

- Unification of education systems for all universities which are in the network
- Capacity of students and tutors’ exchange (programs like Socrates, Leonardo da Vinci), that would help in creating new relations among academics around the world, and at the same time give opportunities for cultural equity.
- Unification of students evaluation system for all universities which are in the network (like ECTS)

So universities will have to face the challenges of an enormous technological progress, and significant demand for knowledge and, at the same time, still implement the concept of sustainable development. To fulfill this target, a multi- and inter-disciplinary as well as holistic approach is required. Sustainable development is a challenge for universities, and in this context the Decade on Education for Sustainable Development is especially important.
References