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# **EDUCATION FOR SUSTAINABLE DEVELOPMENT**

### **Abstract:**

Traditional education has conditioned us to believe that the world and the universe comprises distinct, isolated, material objects – all separated from one another and collectively operating according to rational, deterministic, mechanistic laws. It has become conventional to describe sustainable development in terms of three overarching themes: economic, social, and ecological (sometimes called environmental). These are considered to be the fundamental areas of human experience that need to be addressed in any sustainable development scenario.

This realisation that we are pushing the planet to its limits will require a more holistic view of education.

It implies more of an inter-disciplinary approach and better links among the different school subjects, as well as a growing need for more thematic teaching. The education system will also have to set new goals, both at the level of complexity that the learners have to embrace and on producing learners with increased capacity to act. By combining a deeper and more integrated understanding with social and collaborative learning, students will explore making sustainable choices and decisions about their own lives, the lives of others, and their common environment. Social and collaborative problem-solving, decision-making, and capacity to make informed choices are central characteristics of combining interests and the ability to act.

The interconnected environmental, economic, social and political challenges facing humanity demand capable and responsible citizens who can make informed choices and take appropriate action to create the conditions for social, economic, and environmental sustainability – locally and globally.

Education and lifelong learning are essential requisites for making those choices and taking such action.

The report will present the Latvian experience and results in the education for Sustainable Development. The author of the article will share her teaching experience, will present her conclusions and provide practical examples for perfecting one's knowledge and hope that this experience will be of use to her colleagues.

### **Keywords:**

teaching methods, projects, sustainability, Europe, Baltic States

**JEL Classification:** A29

## Introduction

Sustainable Development retains a stable position in the study process. Technological possibilities and the inventiveness of teaching staff make it possible to combine diverse methods, enabling the students to obtain not only theoretical knowledge, but also strengthen the conviction about the necessity to pursue environmentally friendly lifestyles and introduce green principles in entrepreneurship. An original approach to the study process is of vital importance for an optimal result. Economics and Sustainability open wide possibilities of illustrating and presenting comparisons for creative work. To teach Sustainability we can use models developed by other related disciplines such as ecological economics and environmental economics. (Atstaja et al. 2011)

Education has an invaluable role in the promotion of sustainable development. Its principal task is to promote the understanding of environmental and development issues for everyone. It is necessary to achieve a change of orientation of personal values and to develop their abilities to solve the issues concerning sustainable development. (Laizāne, 2003)

Changing society's mind about sustainability requires knowledge about the situation, awareness of what needs to be done, and actions to change today's unsustainable behaviour. Universities are challenged to develop students' ability to appreciate the complexities of sustainability and translate sustainability knowledge of education into systemic, anticipatory and critical thinking and actions. To meet this challenge, universities provide specific study programmes and courses and integrate sustainability in education and activities. (Sammalisto, K., et al. 2016)

Latvia is a member of the Baltic Sea Region (BSR), which comprises nine countries and a number of metropolitan areas. The region encompasses three Baltic States (Estonia, Latvia, and Lithuania), Sweden, Denmark, Finland, Germany, Poland, and North-West Russia, with St Petersburg and Kaliningrad Oblast, the Russian enclave between Poland and Lithuania (see Figure1). All countries except Russia are members of the European Union. The paper examines only those BSR countries that are EU member states – Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Poland and Sweden.

As Latvia is a comparatively small country in Europe, promoters of Sustainable Development in Latvia are more concerned with advocating the adoption of the related regulations from Europe – e.g. the non-financial reporting directive. In addition, the processes of public procurement and governance of state-owned companies should be recognised as the main economic assets with the power to influence and strengthen the responsible business approach and to provide examples of best practices.

The quality and availability of higher education is a subject more or less discussed in public, although a satisfactory solution to this issue is still far away (Vasilevska 2010).

Sustainable development cannot be achieved by technological solutions, political regulation or financial instruments alone. We need to change the way we think and act. This requires quality education and learning for sustainable development at all levels and in all social contexts.

#### **Education for Sustainable Development (ESD):**

- *allows every human being to acquire the knowledge, skills, attitudes and values necessary to shape a sustainable future.*
- *touches every aspect of education including planning, policy development, programme implementation, finance, curricula, teaching, learning, assessment, administration, etc.*
- *is called by many names in national and local contexts. In some places, Environmental Education (EE) and other related “educations” (e.g. global education and climate change education) are defined and practiced to include socio-cultural and economic aspects alongside environmental aspects. Such efforts should be included in the responses to this questionnaire.*

**The scientific originality and practical significance** of the article are:

- The main examples of case study topics, which are included in education for sustainable development, have been highlighted, as well as case studies and experience;
- The cooperation between different universities and the Baltic University Programme network;
- explaining basic description of the results and attitude in the educational institutions.

**Materials and Methods.** The research employed a combination of approaches; Theoretical analysis of the scientific work and practical papers in this field was taken as the research method.

## **Education, environment protection law and cooperation**

Basic issues of promoting greening of the economy have already been defined in the Environment Protection law (2006), which covers such areas as taking decisions related to the environment; involvement of the public in taking decisions related to the environment; the role of the environmental consultative council, and environmental education.

For example, the matters related to environmental education and education for sustainable development should be included in the mandatory curriculum of the subject or course standard in accordance with the specific character of each subject by coordinating and ensuring succession on different education levels. The environment protection course should be included in the mandatory part of all study programmes of higher education establishments and colleges; a course on sustainable development should be included in the study programmes of instructors of all higher education establishments and colleges. (Environmental Protection Law, Section 42. Environmental Education, 2006)

A clear obstacle to education for sustainable development is the slow progress of introducing appropriate study materials into university curricula. The need to advance environmental education and education for sustainable development is stated in several political documents and declarations by the United Nations, the European Union, ministerial conferences (e.g. in the Bonn Declaration), regional initiatives, and NGOs. Nevertheless, one aspect of major concern remains the “training of trainers” and the introduction of environmental education and education for sustainable development at university level. It should be recognised that in these fields progress is not as fast as it should be and that significant achievements are needed. This is a problem in Latvia. Until recently, only 1,5% of all university students chose to attend courses on environmental science and sustainable development. In order to encourage students to study these subjects the University of Latvia has developed specific courses. The initiative was supported by a project financed by Norwegian grants. “New generations need to know what the real state of the world is, and how to avoid possible difficulties in the future,” says Professor Maris Klavins, senior expert of the project (Klavins & Zaloksnis 2011).

**Figure 1: Map of the Baltic Sea Region**

Source: *Baltic University Programme*

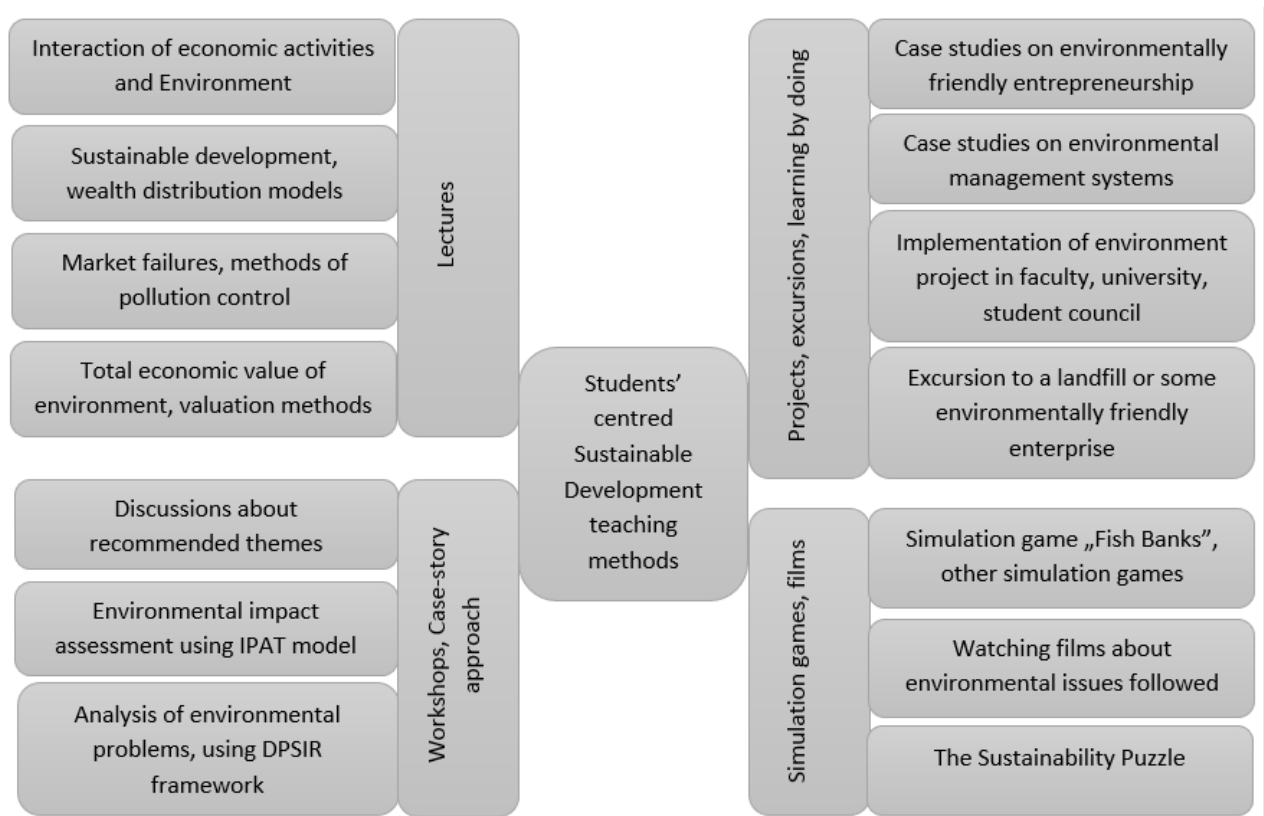
The main achievement of the project was the development of academic textbooks on aspects of the environment and sustainable development. The project was implemented in partnership with the Baltic University Programme, a network of 225 universities in 14 countries in the Baltic Sea Region (see Figure.1). During the course of the project, environmental scientists and educators from several European universities, including Hamburg, Oslo, Uppsala, Saint Petersburg, and Tallinn, were invited to provide advice on how best to teach environmental science. These consultations resulted in the development of eight academic textbooks: Environmental Education at Universities; Environmental Pollution and its Impact; Environmental Technologies; Ecology, Nature Protection; Environment and Economy; Environmental Management; Environment and Sustainable Development (both Latvian and English). The textbook “Environment and Sustainable Development” was published in both English and Latvian, and was

distributed to universities in the Baltic Sea Region, the USA, Australia, Africa and Asia (Klavins & Zaloksnis 2011).

### **Teaching Methods**

When teaching Sustainable Development it is of vital importance to apply different methods in order that students not only acquire theoretical knowledge, but also strengthen their confidence in an environmentally friendly lifestyle and the principles of eco–efficiency in business, as well as encouraging active involvement in sustainable development processes. We recommend the use of lectures, workshops, simulation games, and watching and discussing films related to environmental issues. Likewise, carrying out research on the implementation of environmental management projects in particular enterprises and encouraging students not only to participate in various environmental campaigns, but also to organise their own and to implement green projects in their faculty, university, city, or county (Dimante & Atstaja 2010, Sammalisto 2016). Some example topics for each teaching and learning activity are provided in Figure 2. It is important to emphasise that people and governments are striving towards economic growth and increasing consumption, without paying due attention to the impact of this process on the environment and ecosystem, and this already has, and is leading to, deterioration of human well–being and life satisfaction. (Baltača et al. 2016, Dimante et al. 2016)

As many young people prefer using the Internet, we recommend online lectures by such excellent speakers as: Tim Jackson, David Korten or Allan Atkisson, or TED „Ideas worth spreading” followed by a discussion on the issues raised. For example, Alan Atkisson sings a number of songs, which he has composed, about environmental issues, sustainability and other topical issues (such as GDP, exponential growth and systemic thinking). Such a study aid might revitalize the lecturing process and help students connect emotionally with the subject. A lot of good examples are provided by BUP.

**Figure 2: Teaching methods and example themes**

Source: Author created by Atstaja et al.2011, Baltača et al. 2016

For teaching Sustainability we can also use models developed by other related disciplines, such as ecological economics and environmental economics. For example, the IPAT equation, which means  $\text{Impact} = \text{Population} \times \text{Affluence} \times \text{Technology}$  (Ehrlich, Holdren, 1971), can be used to analyse different consumption and production patterns. Also, for the purpose of analysing environmental problems, the Drivers–Pressures–State–Impact–Response (DPSIR) framework could help group indicators and other information in a logic pattern (EEA, 2007).

### Use of Simulation Games

Simulation games could be very valuable for teaching Sustainability since they provide the students with an opportunity to emotionally experience the consequences of their decisions. For example, teachers can use the simulation game "Fish Banks", developed by Dennis Meadows, in which student teams build a fleet of ships and decide where to go fishing. The result of the game is usually the same - the fish resource is completely depleted and teams are left with a huge number of vessels that need to be scrapped. Such an emotional experience – even I did not thinking about the long-term

consequences of continuous fleet building, develops better understanding of the causes of resource depletion and the need to use a variety of instruments to prevent common resource depletion. A further pedagogic challenge is to develop new simulation games, according to the specific situation of each country and current events.

Over the years study content and changing teaching methods have improved, emphasizing learning by doing and Learner (student)-centred education.

## Conclusions

The 21<sup>st</sup> century offers new technological opportunities for organizing a creative study process. Films, games, databases and the Internet set pre-conditions for reaching a good study result and illustrate theoretical facts with factual examples.

Teaching is a creative process making it possible to combine the latest achievements with their practical application. The article discloses only part of the methods used in the study process and the authors would appreciate it if colleagues could share their experiences in teaching Sustainable development.

The education for sustainable development has a danger to neglect some of its core aspects, for example, focusing education only on the environmental education or economics. The holistic and interdisciplinary approach should be stressed as a key for implementation in the study programmes.

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## References

- (2010). Economics- the environment-growth. In M. Kļaviņš, W.L. Filho, J. Zaļoksnis, ed. *Environment and Sustainable Development*. Rīga : Academic Press of University of Latvia, pp. 129-147.
- Atstaja, D., Dimante, D. (2011). Innovative Approach for Studying Sustainable Development and Environmental Economics. *The Scientific Journal of Riga Technical University, Safety of Technogenic environment*, 15(1), (ISSN 2255-6923), pp. 8-14.
- Atstāja, D., Dimante, D., et.al. (2011). Vide un ekonomika. Monogrāfija (Environment and Economics, monograph in Latvian). Rīga: University of Latvia, p. 256.
- Baltaca, B., Strautmanis, J., Atstaja, D. (2016). Social responsibility education in the BA school of business and finance (Riga, Latvia). In D. Turker, C. Altuntas, S.O. Idowu, ed., *Social*



*Responsibility Education Across Europe, A Comparative Approach*. Springer International, pp.71-90.

BalticUniv.uu.se, (2017). *Baltic University Programme (BUP)*. [online] Available at: <http://www.balticuniv.uu.se/index.php/about-us> [Accessed 10 Jan. 2017].

Daly, H.E., (2008). *A Stady-State Economy, Sustainable Development Commission seminar material*. [online] Available at:<http://www.sd-commission.org.uk/publications.php?id=775> [Accessed 10 Jun 2010].

Dimante, D., Atstaja, D. (2010). The economies of the Baltic Sea Region in relation to green economics, with particular focus on Latvia: environmental sustainability and well-being. *Int. J. Green Economics*, 4(3), pp. 292–305.

Dimante, D., Tambovceva, T., Atstaja, D. (2016). Raising environmental awareness through education. *Int. J. Continuing Engineering Education and Life-Long Learning*, 26(3), pp. 259–272.

Earth Learning Solutions, (2010). *Fish Banks*. [online] Available at <http://fb.earthednet.org/index.html> [Accessed 15 May 2011].

Ehrlich, P.R., Holdren, J.P. (1971). Impact of Population Growth. *Science*, 171, pp.1212-17.

Environmental Protection Law, (2006). Section 42. *Environmental Education*. [online] Available at <http://likumi.lv/> [Accessed 10 Jan 2017].

European Environment Agency, (2007). *Knowledge Sharing and Developments EEA Integrated Assessment Portal [EEA]*. [online] Available at [http://ia2dec.pbe.eea.europa.eu/knowledge\\_base/Frameworks/doc101182](http://ia2dec.pbe.eea.europa.eu/knowledge_base/Frameworks/doc101182) [Accessed 10 Jan 2017].

Jackson, T. (2009). *Prosperity without growth: Economics for a finite planet*. London: Earthscan.

Laizane, I. (2003). Higher Education Materials and Intellectual Availability. In: *4th International Scientific and Practical Conference on Environment Technology Resources*. Rēzekne: Rezekne Higher Educ Inst., pp. 154-165.

Sammalisto, K., Sundström, A., von Haartman, R., Holm, T., Yao, Z. (2016). Learning about Sustainability—What Influences Students' Self-Perceived Sustainability Actions after Undergraduate Education? *Sustainability* 8(6), 510.

TED.com, (2017). *TED Ideas worth spreading*. [online] Available at <https://www.ted.com/> [Accessed 10 Jan 2017].

Vasilevska, D. (2010). Education for Sustainable Development. In: *International Scientific Conference on Society, Integration, and Education*. Rēzekne: Rēzeknes augstskola, pp. 152-160.