



Curriculum for Sustainability-Vector of Future Transformation of Universities

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sustainability, curriculum, innovation, quality

Amalia Venera Todorut

Constantin Brâncuși" University of Targu-Jiu, Romania & Targu-Jiu, Victoriei str., bl.15, sc.1, ap.8, Gorj county, Romania

Moise Bojinca

Constantin Brâncuși" University of Targu-Jiu, Romania & Targu-Jiu, Calea Eroilor, str, no.30, Gorj county, Romania

Vassilis Tselentis

University of Piraeus Greece & 80, Karaoli0&Dimitriou St.,185 34, Piraeus, Greece

ABSTRACT An important strategic element specific to higher education institutions relates to achieving a leadership role in developing transferring knowledge and skills pertinent to business managers, stakeholders and the general public and necessary to attain sustainable development. Higher education, by its nature is a catalyst for propagating sustainable development principles, beyond the inherent borders and obstacles, since it can effectively practice communication, partnership, research and knowledge sharing.

It is without doubt that a decisive factor for achieving a widespread sustainability culture is higher education institutions placing sustainability (sustainable development) in the center of their curriculum university training for future professionals. The aim of this article is to highlight the importance of re-designing the curriculum structure in a holistic perspective, ensuring that sustainability is central to both the curricula of higher educational institutes, as well as in operational practice. A curriculum comparative analysis from selected university departments of Romania and Greece is performed leading to proposals of ways to improve the curriculum and introduce novel ideas into the process of reorienting university studies towards sustainability.

INTRODUCTION

During the last decade universities have institutionalized the principles of sustainable development into curricula, research, operations and procedures, assessments, reviews and reporting. This is mainly due to the adoption of resolution 57/254, by the United Nations General Assembly (2002) and the launch of the "United Nations Decade of Education for Sustainable Development, 2005 - 2014". This resolution re-emphasizes the vital role of education in building awareness on the necessity of sustainability, in accordance with the World Summit on Sustainable Development (WSSD) (Johannesburg, 2002). Furthermore this resolution proposed the necessity for changes to be brought about at all levels, moving from general statements of intent to increasingly detailed specifications for action, thus providing a highly instructive contemporary case study of policy and practice in relation to the foundational issue (Scott & Gough, 2006). It is therefore clear, that all universities around the world faced the challenge of rethinking their mission by restructuring university curricula, research programs and life on campus, incorporating sustainable development not only in teaching and learning, but in the entire institution. Sustainable development would therefore be included in general and specialized subject curriculum areas in a holistic institutional approach, complementing both formal and informal learning, in order to offer a level of knowledge and awareness about sustainable development to all students.

Specific skills for sustainable development as well as the education for sustainable development (EDS), play an important role in helping people understand and accept the need for change in social and economic values, as well the behavioral changes necessary to achieve this goal. It is without doubt that conscious choices may be taken only by people who understand the issues and dilemmas appreciating the cost and consequences of such actions.

Generally Higher Education Institutions have a great opportunity to fulfill the vision of becoming a sustainable organization at the forefront of community, curriculum and research and resource efficiency. The adoption of a more holistic approach to education for sustainability is also likely to demand

the consideration be given to the environment in which students engage in the learning process (Hermann, 2007).

The reorientation of Universities towards sustainability, characterized by transdisciplinarity, holistic, intensive research, critical thinking and problem solving, talent development that would eventually lead to the creation of new value, high quality development can be schematically shown in the following figure:

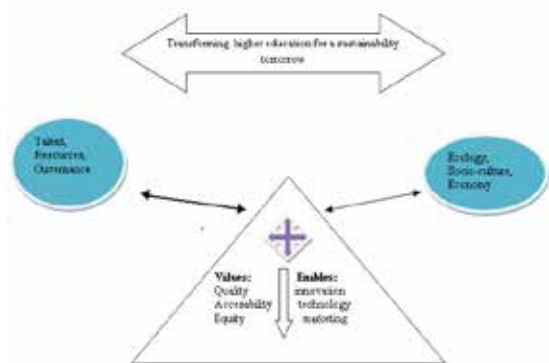


Figure 1: Reorienting higher education through sustainability

Source: Adapted from : Report on the UN Decade of Education for Sustainable Development, 2012

Sustainability is, of course, not just the responsibility of Universities. All social institutions are obliged to demonstrate their social and economic relevance, especially at a time of uncertainty and increasing public scrutiny. It is well known that sustainability practices and policies are transferable to partners through institutions and their behavior (Barlett & Chase, 2004)

OBSTACLES IN DESIGNING AND IMPLEMENTATING A CURRICULUM CENTERED ON SUSTAINABLE DEVELOPMENT

Despite the apparent widespread support for the concept of student education in sustainability, there seems to be only partial implementation. It is clear that an analysis of the implementation approaches and actions is necessary in order to understand the process of incorporating the sustainability dimension in higher education, thus highlighting the potentialities and limitations of recent approaches.

The experience of universities researches highlights four major barriers to successful implementation of the EDS in many disciplines in higher education, as shown in (Posch & Scholz, 2006):

1. Crowded or overcrowded curriculum
2. Irrelevance perceived by the academic staff,
3. Limited knowledge and expertise of the staff,
4. Management of the institution and limited commitment of staff

University experience shows that the nature of barriers identified differs according to the curricula and the orientation of faculties. It is often argued that non-incorporation of sustainable development into the curriculum is due to the "mismatch" between the concept and the study field/specialization, the lack of the staff experience, financial restrictions, and restrictions on education legislation or internal regulations. Universities which have pursued the inclusion of sustainable development issues into their curricula have highlighted a number of solutions to overcome these barriers (see Table 1).

TABLE 1
Barriers to implementing a curriculum

Barriers	Solutions
crowded or overcrowded curriculum	Creating 'space' in curricula through a rigorous analysis of the existing curricula or their redefinition after reconsidering the necessary skills to each academic qualification.
perceived irrelevance by academic staff	Developing credible teaching materials that are fully contextualized and relevant to each area / specialization
limited knowledge and expertise of the staff	Significant investment in staff development and consolidation of capacity to adapt to new.
a lack of institutional commitment by the institution and limited commitment of staff	Develop new policies to motivate and explain the possible benefits. Review and modification of institutional mission and policy.

Source: (Posch & Scholz, 2006)

The proposed solutions reveal that both top management and the entire teaching staff's commitment is necessary in order to customize their experiences on sustainable development, create a better communication and information-exchange environment, as well as providing contextualized information for each area/specialization of study. According to Corcoran & Wals, 2004, higher education has a moral obligation to tackle these challenges and provide viable educational models for sustainable development.

CASE STUDY : COMPARISON OF CURRICULA FOR SUSTAINABILITY

Sustainable education should prepare students for a lifetime of work by learning principles, integrating multiple disciplines, learning how to learn, by providing adequate flexibility in university curricula. Since it is expected that an increasing number of adults today, will be obliged to change their job during their lifetime, sustainable education should prepare people for a continued growth of learning, rather than for entry positions in a chosen field.

Universities, being the main drivers in this process (Stephens

et al., 2008), need to develop study programs, curricula, pedagogical approaches and extra-curricular activities as well as the academic life of the campus, so as to support students to develop their values, skills and thought in order to serve sustainable development.

Sustainability must therefore, become an integral part of planning, activities, facilities design, procurement, investment and student life. The above can be closely linked to the curriculum, since student life is a learning binding process, according to (Radu& Denes, 2011). This paper focuses on the comparative analysis of sustainability in curricula of Administrative Studies programs, by analyzing the integrated disciplines in such curricula from representative universities in Romania and Greece.

TABLE 2
Comparative Analysis

Faculty	Discipline	Share
Faculty of International Relations, Law and Administrative Sciences, UCB	Development planning and urban sustainable development and environmental protection Globalism and globalization	8,33%
Faculty of Administration and Public Management, Academy of Economic Studies	Environmental protection, Economy of urban transport, Integrated sustainable development; Environmental policies, Organization, planning and development of the Romania, elements of urbanism;	15%
Faculty of Political, Administrative and Communication - UBB Cluj-Napoca	Environment, Urbanism and Planning, Community Development;	7,69%
Panteion University of Social and Political Sciences	Management of Natural Resources and Energy; Strategic Business Development; Environmental Law and Planning; Total Quality Management; Tourism and Regional Development; Organization and Management of Independent Organizations;	11,76 %
THE UNIVERSITY of ATHENS Faculty of Political Science and Public Administration	Redistribution Policies in Europe Time and Society Contemporary Issues in Greek Foreign Policy	6,81%

Source: Authors

The data indicates that there is a balanced distribution of sustainability disciplines within the curricula studied ranging from 7 to 15%. The Faculty of Political Science and Public Administration of the University of Athens has a reduced number of sustainability oriented courses, indicating that the department still places emphasis on courses of traditional public administration and law that lack elements of modern approaches to sustainability.

CONCLUSIONS

The analysis of curricula from selected universities in Romania and Greece highlighted the different approaches universities employ to tackle the issue of sustainability. The average contribution of courses related to sustainability ranging from 7 – 15% is considered low compared to other universities especially in the United States and Europe. The reasons for this are numerous, but the University of Athens Department of Political Science and Public Administration, case indicates that old and well established faculties, probably face increased difficulties due to the inertia gathered over time and the unwillingness to shift to modern approaches, which, it is true to say have as yet not been tested thoroughly. Although the evalu-

ation, review and updating the curriculum are essential parts of the academic development process, novel ideas seem to have increased difficulties in old and very traditional departments. It is true that nobody negates the fact that it is not possible to improve and change without surpassing the past, however if appropriate means to evaluate achievement are not in place, then the process of clearly defining goals and means to achieve them, becomes even difficult and painstaking. The fact that the evaluation process has a limited history of only 5 years in Greece, may explain these shortcomings.

Novel and exciting opportunities for higher education arise from the new reality of globalization intermingled with pressing challenges concerning shortage of resources, population growth, climate change, political and institutional instability, accelerated technological progress.. Universities are called upon to go further than simply introducing environmental disciplines or 'ecoliteracy' modules but develop a strategy to implement the far reaching changes in the curricula and academic culture.

REFERENCE

- [1] Barlett, P. F., & Chase, G. H. (2004). *Sustainability on Campus Stories, and Strategies for Change*, Cambridge US, MIT Press. | [2] Corcoran, P. B., & Wals, A. E. J. (Eds.). (2004). *Higher Education and the Challenge of Sustainability: Problematics, Promise, and Practice*. Kluwer Academic Publishers. | [3] Herrmann, M. (2007). The practice of sustainable education through a participatory and holistic teaching approach. *Communication, Cooperation, Participation: Research and Practice for a Sustainable Future*, 1, 72-87. | [4] Posch, A., & Scholz, R.W. (2006). Integrating research and teaching on innovation for sustainable development, in *International Journal of Sustainability in Higher Education*, 7(3), 254-267. | [5] Radu, S., & Dene , C. (2011). *Resources Management and Sustainability*. (Executive Agency for Higher Education Research Development and Innovation Funding), Bucharest, Romania, retrieved from <http://uefiscdi.gov.ro/Upload/3b4536fb-56c5-46fd-b5a5-776c8e5f71f8.pdf> | [6] Scott, W., & Gough, S. (2006). Universities and sustainable development in a liberal democracy: a reflection on the necessity for barriers to change", In: Holmberg, J., & Samuelsson, B. (Eds.), *Drivers and Barriers for Implementing Sustainable Development in Higher Education*, (Education for Sustainable Development in Action; Technical Paper No. 3). Paris: Unesco. | [7] Stephens, J. C., Hernandez M. E., Graham A. C., & Scholz R. W. (2008). Higher education as a change agent for sustainability in different cultures and contexts. *International Journal of Sustainability in Higher Education*, 9(3), 317-338. | [8] United Nations, Educational, Scientific and Cultural Organization. (2012). *Report on the UN Decade of Education for Sustainable Development* (publish for United Nations, Educational, Scientific and Cultural Organization), France, retrieved from <http://unesdoc.unesco.org/images/0021/002166/216606e.pdf>