Chapter 4

Modelling and Simulation of the Need for Harmonizing the European Higher Education Systems

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ABSTRACT

The "Bologna process" has become a highly used idiom by all kinds of people who do not know what exactly it involves. They are unaware of its prerequisites and the correct way to measure its positive and/or negative consequences. Thus, this chapter explains the context of the Bologna reasoning as well as briefly expressing its content. It explores whether the harmonization of the European Educational Systems proposed and agreed on by nations is a fad or a real necessity, taking into consideration the actual evolution of the world. This is done by means of computerized simulation. The simulation tool is provided by TRUE-WORLD System Dynamics Software. In the end, some recommendations for a more efficient achievement of Bologna objectives are provided.

INTRODUCTION

In the 1980s-'90s, internationalization was seen as a means of improving quality and not just for serving its own purpose (Wende, 1999). Currently, *internationalization*, as a general term, especially regarding the *higher education system*, has suffered considerable changes, becoming one of the major features of the higher education system in the 21st century (Campbell & van der Wende, 2000).

At the international level, it was observed the existence of certain notable deficits regarding the cognitive skills and knowledge of the citizens. The deficits originated not only from the registration and graduation rates of education institutions. To overcome this, there needed to be a series of major structural changes in the educational systems and institutions themselves (Hanushek & Wößmann, 2007).

Initially, these structural changes were thought as balancing measures as a result of the previous

expansion and massification decades (Trow, 2001). The latter ones started from the evidence provided by researches arguing that the financial and non-financial wealth of individuals is directly related to their level of education and professional training. Thought in this way, education functioned for individuals as source of substantial benefits in terms of financial and social gains. It led to a progressive and quite difficult to manage expansion not only of the number of students, but also of the diversity within the superior education system (types of institutions, programs offered, students enrolled, personnel recruited, etc). This expansion was transferred into an increasing large variety of students regarding age, gender, geographical origin, ethnicity, socio-economic status, and even scope for achieving the graduation level.

Both the actions of internal pressures (such as international mobility of students and/or marketing of educational systems) and the external ones (such as globalization of professions, regional trade agreements and the activity of international organizations) led to a varied institutional background (Lenn, 1994). This opposed the existence of several legal regulations supporting certain institutional typologies. Governments were compelled to explore new forms of organization, likely to prove more effective within the new framework (Neave & van Vught, 1991; Teixeira, 2009).

In addition, more recent studies proved that the quality of education, measured in terms of students' performance on cognitive tests, produces substantial gains in the labour market, both for individuals and for society (Altinok, 2007, Wößmann & Schütz, 2006). Consequently, there are *measures* that are likely to be undertaken with the purpose of decreasing the major differences between the educational systems. The goal was to revive the European Higher Educational Systems (HESs). These measures aim to: a. define, implement and evaluate national and/or institutional strategies concerning quality management; b. improve the activity of the departments specialized in quality management within universities;

c. harmonize national and international systems for quality management at the Higher Education level; d. establish a series of quality indicators to be taken into consideration when assessing the Higher Education quality.

In this context, in 1999, the Bologna Declaration was signed with the major objective of creating a European Higher Education Area by 2010. Going into depth, some of the primary objectives of the Bologna Process were to promote transparency, increase the mobility of the citizens, create joint academic programs, create networks for the exchange of information, and provide language teaching, employability and student-centered learning (Bologna Declaration, 1999).

On April 28-29, 2009 in Leuven, all the ministers responsible for the higher education system within the European countries met to discuss the Bologna Process. They established new priorities of the European Higher Education Institutions to be implemented by 2020. These included lifelong learning, the access to higher education and the mobility of both students and professors. Besides the necessary measures to be taken after 2010 (especially related to the conversion of the main focus from the governmental and legislative actions towards the implementation of reforms in the institutions), Bologna's last report (Trends V) advocated enhancing graduates' employability, improving dialogue and partnerships with the stakeholders, and ensuring that the new structure is taking into consideration by employers (Crosier, Purser, & Smidt, 2007).

There were several factors that combined with the management self-monitoring processes (also included in the reorganization) thought to help build a culture of quality that transcended the formal processes (Adelman, 2009). First, the curriculum was changed to create a student-centered environment by focusing on learning outcomes. Then, the change in university certificates structures led towards the emergence of several joint and interdisciplinary programs. Teaching methods were also change to focus attention on guiding,

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