Chapter XII

Integrating ICT in Universities: Some Actual Problems and Solutions

Vassilios Dagdilelis
University of Macedonia in Thessaloniki, Greece

ABSTRACT

Universities adopt the most progressive, technologically speaking, methods of research and education. Nevertheless, the adoption of ICTs (Information and Communication Technologies) appears to be necessarily accompanied by a deep shift in the organization of work, and this adoption must to be included in a wider teaching and learning strategy. We present some of the problems arising when ICT systems are integrated in universities and some suggestions to deal with these problems.

INTRODUCTION

Computers and more generally speaking, ICTs (Information and Communication Technologies), have penetrated substantially into every area of human activity: from research to entertainment and from medicine to business management, ICTs have revolutionized the methods used by humans up to now. The field of education is no exception where ICTs have had a strong impact,

perhaps the greatest since the invention of printing. Thus, ICTs seem to be advancing at great speed, and generally are being accepted and adopted by educational institutions, especially universities.

Universities and other similar organizations of higher education constitute socially recognized institutions assigned mainly to research, education, and services. By their very own nature, universities adopt the most progressive, technologically speaking, methods of research and education. Under these conditions, it is expected that they will thus adopt the most contemporary instructional technologies, especially ICTs. In addition, universities are obliged to adopt ICTs, not only because of their nature, but also due to the strong economic, political, and social pressures from external sources — and in actual fact, pressures which often appear for the first time. ICTs offer the possibility of expanding the student body, making available a more flexible schedule, as well as the improvement of teaching methods through the creation of teaching environments with multiple possibilities. Nevertheless, the adoption of ICTs appears to be necessarily accompanied by a deep shift in the organization of work, and this adoption must to be included in a wider teaching and learning strategy (Bates, 2000). Further, ICTs are also the means through which institutions of higher education will be able to respond to the new economic and social demands.

Instructional Systems Design methodologies, such as ADDIE, constitute a generally accepted tool for the design of instructional applications. It has been applied successfully in many cases in the design and the development of modern educational applications. Unfortunately, however, ADDIE cannot be applied to the university instructional systems without some additional work and consideration. Furthermore, it must be added that the design of a new instructional system for the university must take into account the fact that the designed system will function within a larger system, the university itself.

Universities have their own structure and by consequence, new systems like an instructional system destined to function within them must be integrated. Moreover, universities and other similar institutions are also part of a system of larger institutions, with society itself as the largest one. Each one of these institutions, as a kind of homocentric cycle, includes the institutions of the "lower" level and is included in the "higher" one. Universities, for example, are part of institutions of higher education, which is part of the educational system and so on. An analogy is that of live organisms living in a specific environment. Their environment (e.g., a lake) is a part of the regional environment, which is part of a larger ecosystem. Thus, in order to study the function of one organism, we must take into consideration its own internal structure, its parts and their

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