Micro and Macro Level Issues in Curriculum Development

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INTRODUCTION

It is a well-known fact that an educational paradigm shift occurred in the course of the last decade, with a move from traditional to Web-based education at various educational levels (Harasim, 2000; Karuppan, 2001; Kilby, 2001). Web-based education (WBE) has advanced from the delivery of educational content to Web-based sites with interactive functions (Carty & Philip, 2001). Concurrently, new innovative kinds of pedagogical experiments have shifted the paradigm from teaching to learning (Pahl, 2003). However, there is a greater need for innovation in the area of pedagogy rather than that of technology (Littig, 2006). Indeed, educators have realized, as summarized by Armstrong (2001), that good Web-based educational theory and good educational theory are one and the same, the only difference being that WBE transcends the barriers of space and time.

The paradigmatic shift has occurred in both global education (including developing countries) and corporate training. The key impetus for this shift may vary in these areas, but the role of knowledge and intellectual capital, coupled with the needs of organizations and individuals to learn more rapidly, are apparent as the driving forces for WBE (e.g., Bell, Martin, & Clarke, 2004). The growth of WBE has been part of planned educational policy, but at the same time, good international or national experiences have also supported its growth. Furthermore, the cash crises in the western university sector (Bell et al., 2004) and the endeavors towards more coherent and cohesive educational systems and degrees, especially in the European context (Littig, 2006), can be identified as the other galvanizing factors for this shift.

Figure 1. Curriculum development as a continuous process
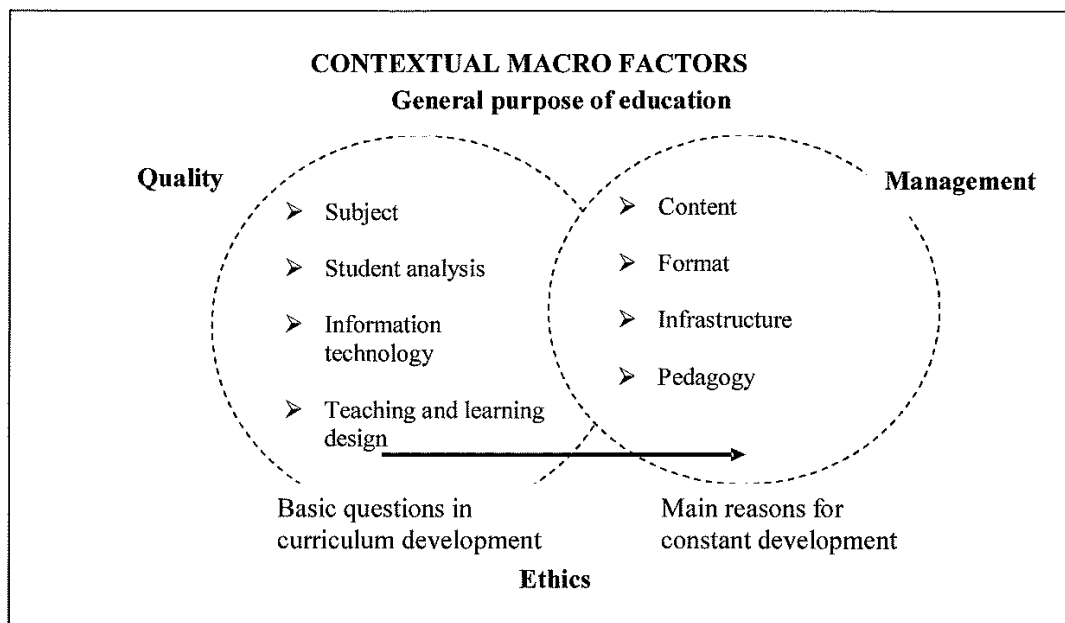
Aim and Structure of this Article

The aim of this article is to pursue the discussion of some essential micro- and macro-level issues in Web-based curriculum development, mainly at the level of higher education (see Figure 1). It was fairly often the case initially that the main concerns in curriculum development were related to students, the subject, new technology, and pedagogical issues. Curriculum development, however, must be seen as a *process* due to these issues, which are constantly evolving. Moreover, curriculum development does not happen in a vacuum—hence the two parts of the article. The first part focuses on the above-mentioned issues, while the second part presents a summary of the general purpose of education, ethics, quality, and management as important contextual concerns in WBE curriculum development.

Curriculum Development in Web-Based Education at the Micro Level

Web-based education, and curriculum development in particular, has taken a step forward in recent years. However, while a substantial body of research has concentrated on this new teaching medium, the results have been mixed and have shown no significant improvement in learning over traditional methods. In addition, the need for systematic and scientific knowledge remains, especially with regard to the effects and outcomes of WBE (Karuppan, 2001; Orr & Bantow, 2005).

Previous studies have shown that technology affects learning in many ways. Pedagogical choices, the design of the course Web site, and the interaction possibilities, for example, have different kinds of effects on learning outcomes (Romanov & Nevgi, 2006). One challenge is to integrate curriculum, technology, community, and learning in a manner that supports student motivation, self-regulation, and retention in WBE (Fisher & Baird, 2005). Unfortunately, technical matters and narrowly defined subject areas still receive the most emphasis from e-learning developers (Littig, 2006).

The identification of potential users and the analysis of their needs form the basis for curriculum development (Karuppan, 2001; Lammintakanen & Rissanen, 2003), but a stronger focus is needed more than ever before on learners and their needs (Littig, 2006). Moreover, Web architecture and learning materials should support the student's particular learning style in order to facilitate learning (Karuppan, 2001; Graff, 2006), while expectations concerning the technology dictate that it should be easy to access and easy to navigate at no extra cost to the learner.

Consideration of the expected level of learning is an important aspect in curriculum development. In other words, the course can be based on the assumption that learning is a process *for* acquiring information. However, the course can also be based on the assumption that learning is a process *of* acquiring information and processing experience, in which the learner selects and constructs useful and appropriate knowledge (Littig, 2006). Careful evaluation is needed during the curriculum development stage on whether or not the chosen technology supports teaching strategies that encourage active involvement and critical thinking, and fosters relationships between learners (Armstrong, 2001).

Curriculum development is time intensive and requires adequate financial and human resources in order to develop tightly organized courses. Web-based learning forces teachers to become course designers who make decisions based on their understanding of the probable needs, expectations, and behaviors of students on their own campuses. The role of tutor is a multi-faceted one, requiring organizational and management skills as well as the ability to motivate and encourage student interaction and facilitate learning and group processes (Packham, Jones, Thomas, & Miller, 2006).

Table 1. The factors of change promoting curriculum development (Pahl, 2003)

Content	The course subject evolves Changes in content to improve the material
Format	Changes in • Staff • Student body (qualifications, numbers, mode of learning) • Timetable (where and when the course takes place) • Syllabus (the content and organization of the course) • Curriculum (level, extent, prerequisites) • Legal and/or financial environment
Infrastructure	Improvements in hardware technology Systems and language technology face constant minor changes Learning devices are developing
Pedagogy	Knowledge acquisition, modeling of and access to educational knowledge Active learning in terms of engaging the student through interactive systems Collaborative learning supportive systems Autonomous learning Evolving instructional design

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