Chapter 11
Problem-Focused Higher Education for Shaping the Knowledge Society

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ABSTRACT
Higher education (HE) has not efficiently targeted a knowledge-shaped economy and has not kept up with the knowledge and IT skills demanded to resolve the problems from social- and work- exclusion. While recently unemployed knowledge workers are searching for new jobs, re-educating policies and career development options have not kept pace with work changes. There is an urgent need for a HE reform in order to address the current socio-economic and work-life crises. For this reform, the authors compare and contrast three promising learning approaches: problem-based learning PBL, work-based learning WBL and problem-focused education PFE. While in PBL and WBL work- and problem-related knowledge is transferred sufficiently, PFE seems to outperform. The paper points to an effective re-organisation of HE by (1) investing in PFE as the means to achieve quality in the learning process and its outcomes and (2) identifying ICT quality features for supporting the PFE learning process.

INTRODUCTION
Many problems have been created by a set of technological and socio-economical changes, known as globalisation. These changes shifted the entire landscape of human experience, encompassing work and education (Friedman, 2006). Further social and work exclusion are problems that seem to become educational barriers for many citizens (Plant, 2005). These exclusions paradoxically exist in socio-economic areas like European Union EU, where educational policies for European integration target a knowledge-shaped economy.
Background and Rationale

Personal and workplace crises influence negatively the state welfare and work-life balance (Berki & Cobb-Payton, 2005). These socio-economic problems are observed while the emergence of a global high-skills economy stresses the flexibility of work, de-standardization, and the communicative role of technology leading to the growing importance of knowledge as an economic resource. These needs have created the rise of knowledge work, workers, and growing higher education HE demands. Knowledge workers are under continuous pressure to learn something new (Pyöriä et al., 2005). The rise of the need for HE reflects not only a socio-economic demand; there is also an emphasis on a social and cultural transformation. In EU the educational quality challenges posed by the new HE curriculum of the Bologna Process (http://ec.europa.eu/education/policies/educ/bologna/bologna_en.html) are remarkable. The compulsory realisation of the new educational policies and practices in the context of the European HE create an impact on every European country.

The Research Problem and the Beneficiaries of the Solution

The assumptions for creating and acquiring new, practical knowledge in HE are that: 1) people have choices in their work lives, and 2) the role of HE is to help people identify and optimise their skills and knowledge. Fouad (2007) argues that the reality of the working world for most people has been one in which choice is afforded primarily by the privileged. The common symptom of social exclusion is likely to be low income, arising often from work exclusion. Thus, the unemployed and low-skilled are a target group for effective professional development and re-educating. HE should aim at well-educated citizens and not just well-trained, well-informed knowledge workers.

Before the research questions, five definitions are discussed next.

Arnett (2002, p. 774) defines globalisation as “a process by which cultures influence through trade, immigration and exchange of information and ideas”. The third globalisation era, after 2000, utilises technological devices and means, i.e., mobile phones, personal computers and the Internet, which has changed the way people relate and interact.

Social Exclusion means exclusion from formal education and employment (Plant, 2005); it can be of economic, moral and cultural nature. The EU-Resolution on lifelong guidance (Council of the EU, 2004) states that the goal of guidance is to focus on those in particular need of such help, including the low-skilled. However, it is left to the IT professionals and educators to alleviate social exclusion by designing educational schemes that guarantee open access when suitable ICT is utilised.

Knowledge society can be defined as “a more progressive state than information society” (Karvalics 2008, p. 32). Technology is an inseparable part of a knowledge society, but the economic performance of a given society depends on the human and intellectual capital of its citizens and the ability of organizations to take advantage of this potential. Thus, a knowledge society can be seen to be built upon socio-technical bases by stressing the centrality of knowledge for progress (Pyöriä et al., 2005).

Knowledge work is “about manipulating symbols … often required to work in teams” (Pyöriä et al., 2005, p. 14). Its core is non-routine problem-solving with the contingency of work processes, while traditional work was dominated by routines and standardization. Knowledge work offers a relatively high degree of autonomy and monetary rewards.

All work depends on knowledge, but because of different nature of work everyone is not a knowledge worker. The demise of industrial man led to a new breed of labour: knowledge workers
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