

# Chapter 5

## Technology Perception Framework for Education Faculties

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### ABSTRACT

*Technological innovations have strongly influenced our routines. Instructional activities have been also reshaped in parallel to the latest developments in Information and Communication Technologies (ICTs). For the adaptation to those indispensable changes, Faculty of Education in Higher Education Institutions must be reformed fundamentally. What is essential and initial for Education Faculties is to comprehend the technological perception of stakeholders within their organizations. These stakeholders are managers, teacher educators and preservice teachers who require certain knowledge, skills and abilities (KSAs) in relation to educational sciences and ICTs. This chapter offers “3 X 3 two-dimensional matrix” framework for Faculties of Education concerning the technology perception of the stakeholders. In the first dimension the authors reveal the KSAs as software, hardware and peopeware, in the second dimension stakeholder groups are listed. In each intersection of the dimensions, the authors provide adaptable hints and factors to increase the possibility of favorable technology perception in Faculties of Education.*

### INTRODUCTION

In every second, humanity is faced with innovations. Every day we wake up to a different world. When we go for shopping, we realize new companies and their new products. Every night, the anchormen of different television channels inform us about new

developments in health sciences, security products, computer tools and so forth. On the other hand, we feel that the pace of the technology overcomes the pace of humanity. In other words, we suffer from adapting these innovative efforts in our daily lives which have been altered from inner dynamics. For instance, if you need money from your account, you should know how to deal with ATMs, or if you change your mobile phone with an extremely-

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functionalized one, you ought to sit down and look at the mobile phone for hours. We have been experiencing a reality that integration of innovations into our daily routines demands as equivalent efforts as the development of those innovations.

Innovation is anything which represents newness in the minds of the users (Rogers, 1995). Yet, when we speak the word “innovations”, the majority of the community assumes that they are about developments in “Information and Communication Technologies (ICTs)”. In the last decade, we have realized the different reflections of ICTs in our lives. We started to use satellite or cable systems for TV, mobile phones for communication, Magnetic Resonance Imaging (MRI) systems for diagnosis of sickness, eye-sensitive security systems for entrance permission, etc... Vrasidas and Glass (2007) reflect on the advantages of ICTs on offering new opportunities for personal and professional developments in addition to enabling access to the knowledge we demand. All these different ICTs and their integration shows us that inevitably, we cannot run away from their effects on different aspects of human lives where education is one of them. Jimoyiannis and Komis (2007) refer to that integration by commenting that ICTs have emerged to alter the innate structure of instructional activities. On the other hand, as Roger (1995) noted those innovations require extensive time to be adapted within the society.

Starting from the late thirties, different scholars from a variety of disciplines have intended to functionalize different technologies for learning and/or teaching activities. Instructional Films and Radios, Teaching Machines, Personalized Learning Systems, and Computer Aided Instruction (CAI) are the examples of these technology infusions into education (Reiser, 2007). In parallel with those theoretical and practical attempts with technology and education, scholars have also discussed about the future of teachers regarding educational policies, practical decisions and implementations, and the philosophical aspect of the profession. Some scholars agreed with

each other about the idea that these innovations would replace teachers and we would not need the teachers anymore. This argument suggested that we should focus more on technologies than teachers. Fortunately, both scientific studies and scholars are convinced that teachers are major actors of our educational systems where they can still take advantage of ICTs for instruction. To this end, different actors of educational systems have commenced to identify the ways of ICTs integration into teaching and learning activities. This multi-faceted revolution has affected educational sciences and ICTs. New philosophical reconstructions have appeared in the educational sciences (such as constructivism) in competition to user-friendly and learner adaptable ICT tools. Historically, Reiser (2007) points out that instructional tool development and instructional design activities have occurred in parallel.

Although the scholars of educational sciences and ICTs spend their effort and time on their disciplines separately, they have recognized the importance of collaboration between their fields of studies. This realization of cooperation leads the scholars to create new and multi-discipliner studies. This newly occurring and rising discipline has been called Instructional (or Educational) Technology which concentrates specifically on effective infusion (macro level) and integration (micro level) of different ICTs into different learning and teaching activities. Well-known scientists of the Instructional Technology field, Seels and Richey (1994), delineate Instructional Technology “... as theory and application of design, development, utilization, management and evaluation of processes and resources for learning and teaching” (p.1). When this definition is scrutinized, we realize that different levels of education have been introduced with a variety of resources both theoretically and practically. This essential evolution of educational activities has placed a lot of work and pressure on the shoulders of teacher training institutions. These faculties of education not only focus on scientific research about the ICTs in edu-

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