Chapter 20
Learning Styles in E-Learning: Theoretical Framework and Selected Empirical Research Findings

Ivana Šimonová
University of Hradec Králové, Czech Republic

Petra Poulová
University of Hradec Králové, Czech Republic

Martin Bílek
University of Hradec Králové, Czech Republic

ABSTRACT

The chapter deals with the latest problems within the ICT-supported instruction and is structured into four parts. The introductory part emphasizes the importance of information and communication technologies implemented in the process of instruction and attracts attention to the didactic aspects of this process (i.e. whether teachers are able to apply suitable methods and forms of instruction, create and use appropriate didactic means which are offered by new technologies, and whether students reach a higher level of knowledge if they attend lessons managed by ICT or run traditionally by teachers). Part two deals with e-learning related phenomena as definitions and basic terminology which has not been clearly defined yet, evaluating pedagogical research in the field of e-learning. Part three focuses on results of analyses of research studies presented in three important e-learning conferences within the last decade in the Czech Republic: eLearning (Faculty of Informatics and Management, University of Hradec Kralove), ICTE (Faculty of Natural Sciences, University of Ostrava), and SCO (Sharable Content Objects, Masaryk University, Brno). Part four introduces a new approach to tailoring the online courses to individual student´s needs and results of research in this field. Not only the learning content but the methodology is considered here from the teacher´s point of view, and the expectations (hypotheses) are verified by the pedagogical experiment.

DOI: 10.4018/978-1-4666-4313-0.ch020

INTRODUCTION

Efforts towards increasing the number of educated people should be prioritized in every society. The Czech educational system has undergone changes relating to the social development. New competences have been defined and reflected in the learning content, adequate teaching methods, organizational forms, ways of evaluation and new relations between elements participating in the educational process have been applied, curricula changed, the learner´s responsibility for his/her own education, creativeness and motivation supported, and economic aspects penetrated the whole system. The traditional approach to education requires attending lectures and classes, completing assignments and other activities in order to successfully pass the subject or course. Electronic education (e-learning) is bringing a new quality to the educational process. Growing demand for university and lifelong education, fast ICT development over the last decade, resulted in the necessity of e-learning implementation into educational process. These features have been slowly but steadily included into the new educational system. In spite of having lots of both supporters and opponents, e-learning has become an inseparable part of the educational process. The Information and Communication Technologies (ICT) have become standard and current approach to instruction is hardly to be imagined without computers.

Taking into account all pros and cons, several questions inevitably arose. Having undergone the starting period of material and technical problems, the time came to deal with didactic aspects of ICT implementation into the instructional process. And what are the results?

- Are teachers able to apply suitable methods and forms of instruction, create, and use appropriate didactic means, which are offered by new technologies?
- Do students have higher level of knowledge if they attend lessons managed by ICT or run traditionally by teachers?
- Are the new didactic means (methods and forms supported by digital technologies) able to optimize the cognitive process of creating knowledge?

THE ICT-SUPPORTED PROCESS OF LEARNING IN THEORY

E-learning and multimedia belong to frequently mentioned phenomena in technological approach to education (Bertrand, 1998). Studies devoted to this problem are practically oriented, and that is why the descriptive format is mostly applied. As some foreign scientists say (e.g. Nichols, 2003), and as it corresponds to our experience, numerous contributions on scientific conferences on e-learning applications provide experience in e-learning implementation, designing and running e-learning courses etc. Theory of e-learning has not been enough developed and discussed. Not theory-led, but technology-led approaches to ICT implementation into education are the mover. Nichols (2003) presents numerous examples of specialists criticizing the technology-led approaches. This phenomenon was aptly paraphrased by Watson saying that “the cart has been placed before the horse” (Nichols, 2003). The non-existence or diversity in terminology used in e-learning and multimedia applications is another proof.

There does not exist a general, common definition of e-learning, that is why we provide those most frequently used ones, presented in various publications, conference proceedings etc.

A concise definition and explanation of *e-learning* can be found in the main European administration documents (e.g. European Commission, 1993, 1995). The eLearning Action Plan by the European Commission says eLearning