

## Chapter 19

# E-Learning and M-Learning for Students with Special Learning Needs: Competence Registration in Design of Personalised Learning Environment

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### **ABSTRACT**

*Educational technology and Information Communication Technology (ICT) play an important role in creating an effective and adaptable learning environment, especially when teaching students with Special Educational Needs (SEN). This includes students with a range of physical, sensory, communication or cognitive disabilities in learning. This research note focuses on integration of students with special needs into e-learning and m-learning environments and discusses the existing level of ICT integration in blended learning environments, based on a review of state of the art literature. The emphasis for special needs education is on high individualisation and personalization of the study process so the research questions of this note focus on the competence registration of the SEN student in the planning, design, learning process and evaluation. The main objective is the development of a model for competence registration in the design of personalised blended learning environments to aid students' successful integration. Based on individual characteristics and competences, appropriate learning styles and approaches are introduced and planned in the individualised learning process.*

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## **INTRODUCTION: ICT AND BLENDED LEARNING ENVIRONMENTS FOR THE INCLUSION OF SPECIAL LEARNING NEEDS**

In contemporary educational settings, learning environments are required to adapt to accommodate a diverse group of students with a variety of needs. Demands for inclusive education have increased and fostered major changes to e-learning and m-learning systems. ICT assisted learning environments are becoming integral part of special education. Approaches to the inclusion of students into mainstream education with the use of educational technology and information communication technology are under investigation (Istemic Starcic & Niskala, 2010; Istemic Starcic, 2010). The design of learning environments for developmental and learning potential within a diverse student population is challenging educational organisations worldwide.

Educational technology and Information Communication Technology (ICT) play an important role in creating an effective and adaptable blended learning environment, especially when teaching students with special educational needs. Students with special learning needs need a teacher's guidance to assist their learning in various learning environments: face to face in the classroom, at home and at their field placements. The creation of blended learning environments provides strong links among face-to-face teaching with students' learning activities at home and at work.

However, the use of ICT in addressing special educational needs has, to date, been inadequate. Most hardware and software is designed for the mainstream population and does not pay sufficient attention to a wide range of abilities and to people with disabilities (Wong, Chan, Li-Tsang, & Lam, 2009). "The current emphases on inclusion and ever-advancing technologies have stimulated much interest in using various ICT applications for both individualised learning and for integrating students with disabilities into the mainstream school environment ... The review of existing literature

indicates a lack of attention to the application of ICT for people with special educational needs" (Williams, Hamid, Nicholas, J., & Nicholas, D. 2006, p. 1). ICT for special educational needs assists people with different types of disabilities with assistive technology (Turner-Smith & Devlin, 2005). The main gap is within the development of learning environments and systems which facilitate inclusion of persons with different types of disabilities. Systems that provide personalization for different types of disability are needed.

Research findings also show that the use of online communication by young people has become a most common activity, and that the internet and virtual environments, where young people with special needs are vulnerable and marginalised, have been highly integrated in the young people's lives (Söderström, 2009; Livingstone & Helsper, 2007). Learning environments and systems which prepare young people with special needs for participation in the information society foster implementation of the development of ICT competences based on equal opportunities within the concrete educational and training objectives.

A qualitative study by Williams (2005) explored the working environment of teachers to identify what needs are to be addressed when developing an ICT learning environment for special educational needs. It considered the main issues in everyday work, the information needs of teachers, new experiences with ICT and knowledge of ICT's impact upon the special educational needs learning environment, facilities and tools within environment. During their daily work, teachers need most: familiarisation with the administrative procedures and policies; lesson plans and ideas; ways to provide evidence of work undertaken, and documentation of current level of achievement in areas of the curriculum that each individual student still needs to cover (Williams, 2005).

In the teaching of special need students high individualisation in learning and systems to support personalization is needed.

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