



---

**Arrigo, M., Novara, G., and Cipri, G. (2008) *M-Learning Accessibility Design: A Case Study*. Conference paper in K. Miesenberger, J. Klaus, W. Zagler and A. Karshmer (Eds.). *ICCHP 2008. Lecture Notes in Computer Science*, vol. 5105, Springer, Heidelberg, 226–233**

### **Abstract**

In the last few years, the number of colleges and universities which provide courses and degree programmes via distance education has grown dramatically. People with special needs will benefit from these online opportunities, as long as the information and activities posted to internet sites are appropriately accessible with adaptive technology. This paper presents some research regarding accessibility design for a mobile learning experience carried out at the Italian National Research Council – Institute for Educational Technologies. In particular, we introduce some considerations about the methodology and the design steps used to build some educational tools on mobile devices that are fully accessible for students with special needs using a compact screen reader (on a smartphone). We briefly outline the common problems of accessing an online learning management system through a smartphone (services and information), then introduce the test phase of the tools designed for users with visual impairment.

### **Main findings**

The research presented in this paper aims to contribute to opening up learning opportunities to people with special needs and, more generally, the adoption of new mobile technologies for acquiring knowledge. We put forward some suggestions, as a result of our experience, for developing a new mobile learning environment where the main aim is social integration, as well as collaborative learning between all students, regardless of disability. Moreover, we describe the AMobiLe, a system we developed as a fully accessible online environment for mobile learning. By means of this system, we explore and evaluate ways of using mobile devices to stimulate collaborative learning and to break down some of the barriers for students with disabilities in order to reduce the digital divide.

AMobiLe is just the first part of a wider project, aimed at developing an environment to allow people with special needs actively to participate in distance learning courses, exchanging information and communicating with the other participants, so they are fully integrated in the class and all students have the same opportunities.

The conclusions we have reached suggest that, when designing technology for people with disabilities, it is necessary not to just respond to their disadvantages, but to take a broader view of their communicative and social needs, as well as considering their overall capacities and knowledge. In fact, very often attention only focuses on technological aspects which are lacking, and assistive technology is seen as an aid, as a support to fill this gap, running the risk of losing sight of the individual's overall needs.