



Arrigo, M., and Cipri, G. (2010) Mobile Learning for All Journal of the Research Center for Educational Technology (RCET), 6(1), 94–102

Abstract

This paper presents research regarding accessibility design for a mobile learning activity 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) and then we introduce a mobile learning environment, the Accessible Mobile Learning (AMobiLe), which we have designed with specific features for students with visual impairments. One of the main aims of our research is to explore and evaluate ways of using mobile devices to stimulate collaborative learning, as well as to break down some of the barriers for students with disabilities in order to reduce the digital divide.

Main findings

People with disabilities will benefit from the significant social, cultural and economic benefits of ICT as long as information and services are designed appropriately. Multimodality can play an important role in improving the accessibility of emergent technologies such as mobile devices. In this paper we present AMobiLe, a fully accessible online environment for mobile learning. The system has been implemented by means of a multimodal software environment, accessible both through desktop computers used by students in the classroom or at home and mobile devices that are used to support on-site learning activities. Moreover, the adoption of Universal Design principles means that all users can benefit from this system. In particular, the AMobiLe system can be used and accessed by students with special needs, as well as those with regular abilities, and all can provide interpretations according to their various points of view, using hypermedia notes. Furthermore, our experience has led us to the conviction that adopting assistive technologies and following specific design guidelines can play an important role in the integration and social rehabilitation of people with sensory dysfunctions and improve their personal autonomy. Thus, we have presented considerations and proposed techniques we have found to be useful in increasing the accessibility of a mobile learning environment for people with special needs, in particular for those with visual impairment. We hope that some of the ideas presented here will inspire other researchers to explore access strategies within their own work. In our opinion, multimodality and accessibility are essential for integration. Multimodality overcomes the limitations of various interfaces, using raised touchscreen keys, GPS navigators, mobile phones and handheld devices to introduce and consult data, and different colour options for those with colour blindness.