The challenges of teaching informatics for visually impaired people in secondary education

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Abstract

Computers and informatics play leading role for the visually impaired (VI) people in studying and employing. The autonomous use of computers helps VI people to study and work. The education of VI people is realized in three main aspects: integrated school education, higher education and adult education. Web accessibility and assistive technologies can be improved along two main areas. From technological point of view, components and frameworks could be designed for web developers in order to make accessible web developing and universal design easier and more effective; in addition, language algorithms and software tools could be created for users to enhance the textual content browsing and understanding process. From educational point of view, on the other hand, an accessible web programming module could be integrated into the web development curriculum in higher education; and on the users' side, integrated school education could be improved through further trainings of teachers, learning materials, and by help of assistive information technology expert traveling teachers.

In this study, the possibilities of improving assistive technologies in secondary education are discussed in detail. We will walk through the main topics of secondary education, focusing especially on application skills. These topics in informatics are the following: computer fundamentals, typing, screen readers and magnifiers, character recognition, word processing, using spreadsheets, HTML and web browsing. In every topic the possibilities of the integrated school education are discussed. In a more appropriate educational environment, VI people would succeed in more areas of life, and more VI people would gain access to higher education. Three components could help to reach this goal: the appropriate training of teachers; the help of highly qualified traveling teachers; and the good teaching materials containing uniform methodology.