Accessibility University Centers for Students with Visual Impairments in Romania

Marian Pădure

Babeş-Bolyai University, Department of Special Education,
Cluj-Napoca, Romania
marian.padure@ubbcluj.ro

ABSTRACT

Access to information, the main feature offered by access technologies, is one of the key factors in the current conditions for inclusive education and training of individuals with visually impairments. The present paper aims to underline the work done in recent years in the Support Center for Access Technology for students with visual impairments, especially during 2013-2014, when other accessibility centers for blind students were established at four universities from Romania. The purpose of these centers is to increase access to information for a larger number of students with visual impairments, thus increasing their social and professional inclusion.

1. INTRODUCTION

Technological developments have led to the adaptation of the educational process, resulting in the development of new assumptions regarding the educational process designed directly or indirectly in the education of people with disabilities. The emergence of new trainings, new ways to facilitate access to vocational training and to higher education for youth with disabilities, allowed the formation of skills and abilities in areas representing domains inaccessible to people with disabilities.

At European level, in the last three decades, there have been a number of initiatives aimed at raising awareness regarding the problems and benefits of the systems in response to the needs of people with disabilities. These European initiatives have led to a concept called Design for All [1, 2]. The domains that have contributed to the design for all contained information and analysis from three main areas:

   a) support and access technologies (AT), based on the knowledge of the people with disabilities,

   b) design of the product with an emphasis on innovation and

   c) Human Computer Interaction (HCI).

All these data were analyzed and combined in the context of a fast technological development, in conjunction with educational training. The first course on human-computer interaction at European level had been

reported in Greece in 1993, two years before Microsoft's. The accessibility guidelines for online content (Web Content - WCAG 1.0) were published in 1999 and revised (WCAG 2.0) in 2008 [3].

Rapid changes occurred at the informational level led to changes in search style for information and communication. The Google, Wikipedia and Facebook appearance has led to significant changes in terms of access to information and communication, and the emergence of mobile smart-phone has changed the way human individuals communicate. The launching of the first iPhone in 2007 brought other changes in the design of the user interface and thus user expectations have changed, leading the access to information to another level [2].

In Romania, the educational path of a visually impaired person can go through all stages in an educational institution dedicated to meet their problems and needs (special education) or in an inclusive school.

Students with visual impairments follow the same levels of compulsory education as students without disabilities (pre-primary, primary, and secondary).

In terms of an educational and vocational guidance for students with visual impairments, the issue is discussed with and decided by their family and specialists. They want an educational and professional education based on a well-defined profile. The learning process became motivated by the use of computers and access technology. Access technologies provide students the opportunity to have access to a vast amount of background information, which enhances even more the sense of adaptation to problems and to the requirements of the educational and professional level [4].

Continuing studies at a university level raised many problems for visually impaired students, academics, and other structures such as libraries. Thus, together higher education institutions, and teachers must adapt to a new student profile, the visually impaired student.

2. SUPPORT CENTERS FOR BLIND AND PARTIALLY SIGHTED STUDENTS

The Center for assistance and assistive technologies for blind and partially sighted students (*Centrul de Asistenţă în Domeniul Tehnologiilor de Acces pentru persoane cu deficienţe de vedere* - CATA) is the result of the collaboration between the "Babes-Bolyai" University, VISIO foundation (Netherlands) and The Travelling Book Foundation (Fundaţia Cartea Călătătare – Focşani, Romania).

These specialists visited similar centers in the Netherlands, Germany and the U.S. The model has been adapted to make printed materials more accessible. The model also focused more on the training of visually impaired students and their teachers from the University to use the current technologies and less on the development of specific applications.

The main objective of the CATA center is to promote access technology among students with and without disabilities, both at an institutional and individual level, being less focused on creating new applications.

The work performed in the center aims to provide information on the latest methods, equipment and applications (the use of both freeware and commercial screen readers, the use of tactile images generating applications, text and sound editors, mobile devices - focused applications etc.) in access technology that lead to a better integration of the visually impaired students in the university education and to an easier professional path.

The center provides services to students with visual impairments, but also to institutions which have visually impaired students as beneficiaries.

Figure 1. Front Page CATA web site

The objectives of the center are:
- promoting the support technology at an institutional and individual level;
- promoting the principles of information accessibility for students with visual impairments;
- computer courses for students with visual impairments;
- advising students with visual impairments and teachers interested in purchasing appropriate equipment and configuration educational activities;
- translation of technical documentation for equipment and software used by visually impaired people;
- testing of equipment and specific applications for people with visual impairments;

- research / scientific papers in the AT / ICT / education of people with visual impairments / special education fields.

The services provided by the center are:
- training in the use of computer technology and web access as compensatory means for visual impairments;
- installation and configuration of accessible applications and equipment for students with visual impairments;
- printing courses / books / materials in Braille specific to blind students;
- transforming courses in accessible format for students with visual impairments, depending on their needs;
- transforming courses/ articles / books in audio format only in Romanian for students with visual impairments.

The target group is represented by students with visual impairments, found at all levels of education; teachers who want to create accessible materials for students with visual impairments and centers / institutions which have as beneficiaries visually impaired students.

During its 10 years, CATA center provided support for over 200 visually impaired students at university in different areas: special education, psychology, mathematics, computer science, history, journalism, social work, political sciences and administrative law.

To meet the new educational models for teaching and learning adapted to visually impaired students, graduates of the specialization Special Education at the Babeş-Bolyai University take a course in information technology and access technologies. Thus, through this course, they are familiar with the difficulties encountered by people with different disabilities and which are the ways to support these people when they will work in the field.

Through this course the students aim:
- To have knowledge about accessibility services;
- To know assistive devices for people with disabilities;
- To know how to use the assistive technology;
- To identify and know the problems at the disabled person;
- To know the advantages of access technologies
- To know how to assess and record the progress in education when access technologies are used.

Most of the visually impaired students graduate Romanian special schools for pupils with visual deficiencies. There are six high schools in Romania that offer educational services for pupils with visual impairment. Based on their educational and professional interests, the students are advised to follow the courses of the most appropriate university.

The collaboration between students and CATA center relies directly upon the students' needs and interests. At the beginning of the academic year all faculties identify students with visual impairment who are registered, all of them being personally contacted in order to be informed

with the services offered by the center. Depending on their needs, the students then contact the CATA center in order to ask for appropriate support. The CATA Center has a strong partnership with the Central University Library (Biblioteca Central Universitară) which offers with priority the books needed for greater accessibility. The students receive the accessible information and need to follow a protocol through which they commit to not facilitate the illegal distribution of the received materials.

Within Babeş-Bolyai University, there is an office dedicated to all registered University students who present disabilities (of any type). The CATA center caters exclusively for the visually impaired students, focusing on making materials accessible and helping students with visual deficiencies to gain easy access to information.

3. CENTERS FOR ACCESSIBILITY COURSES IN OTHER UNIVERSITY CENTERS IN ROMANIA

Our acquired experience during the few years of activity stood behind the project Accessible courses for blind students

The goal of the project was to provide support in the accessibility for lectures / seminaries / laboratories and bibliography for blind and low vision students from other five universities in Romania.

Looking at the number of students with visual impairments from other universities, and the lack of material in accessible format, during 2013-2014, the Foundation Traveling Book with the support of ORANGE Foundation, together with the Department of Special Education in Cluj-Napoca, initiated the opening of four pilot centers in Iasi, Bucharest, Timisoara and Oradea.

The project goals were to:
   a) facilitate the access for blind people to higher education and to increase graduation chances for students with visual impairments;
   b) ensure for blind students similar conditions to those of sighted students, through the acquisition of assistive equipment and creating accessibility information centers.

Another purpose of the project was to offer financial support for 20 students with visual impairments to purchase portable equipment's (notebook, magnifier) required for self-study and educational activities.

The main services provided in the centers were:
   a) Printing lecture and seminar materials in Braille or large print;
   b) Digitizing in electronic format, Daisy format or audio format.

Similar accessibility centers were open in Al. I. Cuza University of Iasi, Bucharest University, West University of Timisoara and Oradea University.

4. ONLINE LIBRARY FOR BLIND STUDENTS

The exponential expansion of available material required by students allowed the building of an online library which includes materials in an accessible format for students with visual impairments and learning disabilities.

Most of the accessible materials realized in CASN centers and CATA are transformed into Daisy format and loaded into the Digital Library of the Traveling Book Foundation (www.carteacalatoare.ro).

The electronic books included in this library are intended solely for people with visual impairments or reading difficulties.

Figure 2. Front Page online library for blind student

This online Library uses Daisy format as the standard format for accessibility because it is a relatively accepted format by the copyright law in Romania. The actual legislation states that any organization or accredited institution can create accessible formats for people with disabilities.

In the first stage, the library can be accessed only by students in the CASN centers, in the partner universities, so that in the next period, the service will expand to other categories of readers with or without disabilities.

5. DISCUSSION AND CONCLUSIONS

Accessibility is a very broad concept, not only for groups of people with different disabilities. Accessibility combines methods and models of universal design, universal design for learning, usability, inclusive design, learning models and so on, resulting in a friendly and approachable environment for all active participants in society, at all educational, professional and social levels.

Access technologies have created the premise of access to information for a group of people with a high potential for development and support of modern values but, for this it is necessary for society to adapt to the needs of visually impaired people.

Analyzing the actual economic and geo-political aspects we cannot put a sign of equality between the multiple support centers for students with visual impairments regarding the academic environment, but we can take small steps in accessibility regarding the

environment, as well as the level of information, to increase the quality of life for visually impaired students.

The current legislation in Romania doesn't allow people with visual impairments to purchase discounted access technologies. In other European countries, the legislation related to social protection and insurance allows people with impairments to deduct these expenses depending on the disability type.

At the same time, it is required to raise awareness of the importance of access technologies for a person with vision impairment among specialists in the field of education, families of children with disabilities, employers, and the general public.

Even though we live in an even increasingly tech society, in which the focus is on mobile learning, with access to information and education anytime and anywhere, this does not exclude inaccessibility barriers from occurring.

In the plan for initial and / or ongoing training for future teachers and special education specialists, the introduction of presentation courses and the use of access technologies at a primary level, followed by additional courses to develop their skills for the people with disabilities with whom they interact are recommended.

A solution in terms of raising the awareness of students who do not have a disability was to involve them in activities related to the development of materials available for their visually impaired colleagues, and for students with visual impairments from other specializations. We started this volunteer project two years ago and received positive responses from the students.

The increasing degree of collaboration between different institutions (University - Library - professional and vocational counseling centers) could lead to increasing the insertion on the labor market of young graduates with visual impairments.

A study conducted in 2008 [5], updated data in 2010 [6] showed that employers have distorted perceptions regarding disabilities, especially about blind people.

Until now, the main goal of the Center was to develop accessibility services based on the already existing access technologies in order to create an inclusive environment at the University level. All members and collaborators of the center worked in national and international research projects related to education and access technologies. Among these, we can mention the development and implementation of the Daisy standard in Romania, with the support of The Travelling Book Foundation, the development and implementation of the RoboBraille service, the development of accessibility and counseling services in other universities.

At the University level, in the past years, the teachers having visually impaired students attending their classes, offered them additional materials in electronic format; the teachers' discourse shifted to the offering of additional information needed by the students to understand concepts, notions and even graphics; also, the visually impaired students can participate to exams with their own laptops, as the oral or Braille – written examinations being no longer used.

The centers for accessibility of courses for students with disabilities should not be viewed as an institutional obligation, but as a behavior that has direct positive effect on the educational process for students with different disabilities. At the same time this aspect will be observed in the increase of quality of life and in the degree of access to learning through e-learning systems and mobile learning, with positive effects in social and professional inclusion of young people with different disabilities as active members in the cultural and economic development process.

REFERENCES

[1] C. S. Lányi (eds.), *EDeAN Publication 2009. Principles and Practice in Europe for e-Accessibility,* European Design for All e-Accessibility Network, 2009 online http://www.toetsenmetenweten.nl/EDeAN_Publication_2009.pdf

[2] G. Whitney, S. Keith, C. Buhler, S. Hewer, L. Lhotska, K. Miesenberger, F.E. Sandnes, C. Stephanidis and C.A. Velasco, "Twenty five years of training and education in ICT Design for All and Assistive Technology", in Technology and Disability, 23, pp. 163–170, 2011. Online https://oda.hio.no/jspui/bitstream/10642/1553/1/1021490.pdf

[3] Web Content Accessibility Guidelines (WCAG) 2.0, W3C Recommendation 11 December 2008, online http://www.w3.org/TR/WCAG20/

[4] M. Pădure, *Stiluri de învăţare şi tehnologii de acces în contextul deficienţelor de vedere*, Presa Universitară Clujeană-Cluj-Napoca, 2014.

[5] M. Pădure and C.A. Nica, *Atitudinea angajatorilor şi angajaţilor privind încadrarea în muncă a persoanelor cu deficienţe vizuale*, Conferinţa Naţională de Psihologie Industrială şi Organizaţională, organizată de Asociaţia de Psihologie Industrială şi Organizaţională, Cluj-Napoca, 2008.

[6] M. Pădure, Orientări profesionale pentru persoanele cu deficienţe de vedere, in C. Sas., I. Chelemen, D. Boros, R. Onicas (eds.) *Educaţie şi schimbare socială: strategii de cunoaştere şi intervenţie psihopedagogică*, Editura Universităţii din Oradea, 210, pp. 212-216.