

## Ανοικτή Εκπαίδευση: το περιοδικό για την Ανοικτή και εξ Αποστάσεως Εκπαίδευση και την Εκπαιδευτική Τεχνολογία

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Εξ Αποστάσεως Εκπαίδευση: πρόσβαση για όλους

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Βιβλιογραφική αναφορά:

## Distance Education for all / Εξ Αποστάσεως Εκπαίδευση: πρόσβαση για όλους

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### Abstract

Distance education options create learning opportunities for many people but simultaneously, they erect access barriers for some individuals with disabilities. This paper addresses this target group - students with disabilities- and encourages their greater inclusion in the planning and delivery of library services. Furthermore, it identifies the lack of literature on information seeking behavior of people with disabilities and the fact that distance learning literature does not discuss issues of equal access for this vulnerable group of users. For eliminating information disability, this paper pinpoints the essential role of libraries, legislation and assistive technologies and highlights the need for further research and investigation in the fields of on-line accessibility, information seeking behavior of disabled students and disabilities in higher education.

### Περίληψη

Η εξ αποστάσεως εκπαίδευση παρέχει δυνατότητες μάθησης σε πολλούς αλλά παράλληλα προκαλεί και εμπόδια πρόσβασης στα άτομα με αναπηρία (ΑμεΑ). Το παρόν άρθρο απευθύνεται στους φοιτητές με αναπηρία (ΦμεΑ) και ενθαρρύνει την ενσωμάτωσή τους στο σχεδιασμό και τη διανομή υπηρεσιών πληροφόρησης. Επιπλέον, καταγράφει τη μηδαμινότητα αναφορών για την πληροφοριακή συμπεριφορά των ΑμεΑ στη βιβλιογραφία και στο χώρο της εξ αποστάσεως εκπαίδευσης, η οποία δεν έχει ασχοληθεί με ζητήματα ισότιμης πρόσβασης αυτής της ευπαθούς ομάδας χρηστών. Με απώτερο στόχο την εξάλειψη της πληροφοριακής αναπηρίας, το άρθρο αυτό επισημαίνει τον ουσιαστικό ρόλο των βιβλιοθηκών, της νομοθεσίας και των υποστηρικτικών τεχνολογιών και τονίζει την ανάγκη για περαιτέρω έρευνα στους τομείς της on-line προσβασιμότητας, της πληροφοριακής συμπεριφοράς των ΦμεΑ και των αναπηριών στο χώρο της πανεπιστημιακής εκπαίδευσης.

**Keywords:** Distance Learning, People with Disabilities, Libraries, Accessibility

**Λέξεις Κλειδιά:** Εξ αποστάσεως Μάθηση, Άτομα με Αναπηρίες (ΑμεΑ), Βιβλιοθήκες, Προσβασιμότητα

### Introduction

During the last years, increasing numbers of young people with disabilities are attending postsecondary academic institutions (Henderson, 2001; National Council on Disability, 2000). However, these individuals experience far less academic success than their non-disabled peers (Horn and Berkold, 1999). The impact of technology on the delivery of education is clearly demonstrated in the tremendous growth of on-line distance education programs and web-based distance learning course offerings. It is assumed by most instructors and administrators that anyone with computer and Internet connection can access these courses and the supplementary materials offered

by libraries, university departments, businesses and other groups. In the global information society, growing numbers of individuals with disabilities have access to computers, assistive technology and the Internet. However, some of them still do not have access to all the content delivered via the Internet because of the inaccessible design of electronic resources.

### **People with Disabilities (or Differabilities)**

According to the Greek Act 1566/85, people with disabilities are defined as those that due to physical, mental or social reasons perform retardations, disabilities or disorders and they have serious difficulty in getting involved in education, being productive and integrating with society. The Greek Parliament has declared 3<sup>rd</sup> December as National Day of People with Disabilities (Act 2430/96) with the intention of eliminating the disability gap.

There are several categories of people with disabilities such as the blind or people with visual impairments (VIP), learning disabilities, pre-lingual and post-lingual deaf people, deafblind, individuals with physical impairments, developmental disabilities, syndrome Down, attention deficit disorder, multiple sclerosis, autistic people, etc. Disabilities are divided to hidden, visible and temporary ones. The category of hidden disabilities is the most difficult because they are not easily perceived by instructors, librarians, etc.

There is also a broader category of people with disabilities, the “print-disabled” or the “print-handicapped”, which includes all those that, for the above mentioned reasons, are unable to handle and use the standard print. Students with disabilities need access to the same resources as their able-bodied peers (Kavanagh, 1994). In USA disabled college students need access not only to textbooks but also to newspapers, professional journals, government documents and other reference sources (McNulty and Suvino, 1993).

Print-disabled people are not able to use libraries designed for the average, able-bodied, traditional student. These people need alternative format materials (talking books, recordings for the blind, braille material, e-braille, adapted literature, digital talking books, captioned material and videos, easy-to-read literature, etc) and accessible web-based resources. But, how many distance learning programs offer such accessible material to these students?

For example, people with visual impairments on average prefer studying humanities, social sciences, psychology and not areas of science, such as engineering, chemistry, physics, biology, and mathematics. Those areas have traditionally been less accessible to students with visual impairments in particular, because the complex visual information generally associated with these disciplines has not been readily accessible (Coonin, 2001).

People with disabilities have a lot of attributes of information poverty and social exclusion, such as poor education, low levels of literacy and income. Apart from the social exclusion, they also experience digital inclusion, disability gap and live in a world of information apartheid. But soon all education stakeholders (colleges, institutions, libraries, instructors, providers of content, etc) have to recognize that the

functional disability of people with disabilities must stop implying also their information disability.

### **Distance Learning and Students with Disabilities**

It is widely known that computers and Internet are less available to people with disabilities, that's why we hear often about information rich and poor people and computer "have" and "have-nots". Without access to computers and Internet, students with disabilities cannot participate in web-based learning options. They have to deal with innumerable problems, to struggle for gaining access to basic resources and material for their e-courses and because of those, a lot of them resign. It is likely that web resources and other information technology will erect barriers to some people unless universal design considerations are made as resources are being developed. Applications of universal design to instruction in general have begun to appear in the literature (Bar and Galluzzo, 1999; Bowe, 2000; Burgstahler, 2000; Center for Applied Special Technology, 1999). Most articles and books about distance learning design, however, do not discuss universal design principles or specific access issues for students and instructors with disabilities. The majority of articles that discuss the application of universal design to Web pages thus far have appeared in library publications (Schmetzke, 2001).

Core distance education journals, such as "The American Journal of Distance Education", "Journal of Instructional Science and Technology", "Virtual University Journal", "Online Chronicle of Distance Education and Communication" and the "Journal of Library Services for Distance Education" do not reflect any concern about the accessibility of online resources for people with disabilities or the "future of library services for off-campus/distance education" (Schmetzke, 2001). Pertinent special-theme issues in other disciplines are not any different in this regard, such as the special issue on "Telecommunication, Distance Learning, and the World Wide Web" in Technical Communication Quarterly.

As for library literature, we searched 400 library-related publications for identifying material relevant to accessible distance learning or distance education so as to examine the dearth or richness of resources on this subject. The results were only...two relevant publications (Burgstahler, 2002; Schmetzke, 2001).

The largest division of ALA (American Library Association), the Association of College and Research Libraries (ACRL) revised in 2000 its 1990 "Guidelines of Distance Learning Library Services", where it gives the definition of "distance library services". Although the "distance learning community" addressed there covers:

"...all those individuals and agencies, or institutions, directly involved with academic programs or extension services offered away from a traditional academic campus or in the absence of a traditional academic campus, including students, faculty, researchers, administrators, sponsors, and staff....(ACRL, 2000)"

The current guidelines do not include standards for making electronic resources accessible to individuals with disabilities (ACRL, 2000). The ACRL has clearly missed an opportunity to model for its members how a commitment to accessibility can be integrated into distance learning policy. In the literature, there are accessibility

policies of academic, public, special and college libraries but it is quite scarce to find policies for designing accessible distance learning courses and web-based resources. Few colleges and universities have policies and guidelines that specifically address the accessibility of distance learning classes. Because of this, it is not surprising that many college, university, library and distance learning webpages are not fully accessible to individuals with disabilities (Craven, 2000; Evans, 2000; Guthrie, 2000; Lilly and van Fleet, 2000; Rowland, 2000; Schmetzke, 2001).

Distance learning options create learning opportunities for many but erect access barriers for some individuals with disabilities. Making a distance learning course accessible to everyone minimizes the number of legal challenges and complaints, supports a diverse student body, creates a better learning environment for everyone and is the right thing to do.

Even though the number of students with disabilities gets increased continually, they continue to constitute a minority to the general student body. For this reason, the available information for their needs and experiences are quite limited. There are no studies that record and monitor their real-life learning and educational conditions so as to suggest further improvements and help them participate more actively in their colleges and universities.

This ignorance is due to the fact that students with disabilities rarely enter academic institutions. Deaf students constitute a small but increasing number in college communities. For example, academic libraries have not taken the needs of deaf students into consideration because the minority of them reaches this educational level. Most of them get enrolled to colleges with little or no knowledge of their institution's library systems and resources. This situation gets even more complex, since most librarians ignore them accordingly, thus there is no interaction which could lead to cooperation and equal information services.

The result is that students with disabilities remain unserved, disadvantaged and underprivileged. There is online distance education anytime, anywhere but not for everyone while disabled students should be a part of their institutions' libraries and not apart.

In library literature, the researcher may find paradigms and personal narratives of students with disabilities. Damon Rose (from London) finds ridiculous the fact that blind students have to scan a whole book first (a process that may take up to 8 hours which means a whole working day) before reading it because it is not available in accessible format while their fellow-students get the information that they want just by entering the library or using several digital libraries. Blind students must work 10 times even harder than their sighted fellow-students, that's why most of them get lower grades because of their superhuman effort.

### **The Library's Role**

The history of library services to people with disabilities is recent and comparatively short. The most important challenge that libraries and information services deal with in our information age is "inclusiveness". For facilitating students with disabilities succeeding in the distance learning programs of their choice, libraries have to:

- research the current situation
- focus on students with disabilities and respond to their specific needs
- meet access challenges and find solutions for enabling and integrating disabled students
- take steps towards accessible resources
- develop policy statements
- adopt universal design principles
- involve all education stakeholders
- evaluate their own progress
- deliver state-of-the-art services
- assign responsibilities and establish basic processes
- adopt guidelines for accessible electronic and information technology
- disseminate information on accessibility
- procure accessible products so as to remove barriers to access
- develop successful strategies for bridging information gaps putting person first, disability second
- find the best fit between user, environment and technology
- act for the removal of some copyright barriers

These methods will provide a new vista on library services, will open new worlds of information, expand the existing library systems and finally, by implementing all these, libraries will hopefully be transformed from reading places to access points.

The literature of library and information science (LIS) discusses consistently the need for libraries to interact with their communities. But this discussion tends to focus on general populations (faculty, students, staff) and not on the so-called special ones (people with disabilities). For this reason, librarians should change their attitude, way of thinking and focus of interest. Besides, attitudinal barrier is the most often cited one in providing equal services to people with disabilities. Librarians should focus not only on well-functioning and well-educated students but also on weak readers. Even more, they should be proactive and they should not assume disabled students' needs, aspirations and expectations.

It is worth noting that all the above do not imply that all the responsibility is solely left within the library. On the contrary, the institutes that offer the distance learning programs and their stakeholders have to understand that students with disabilities pose a challenge and not a problem. They have to respect and listen to their needs, to include them in every phase of their educational process and plan for them, not without them.

Last but not least, students and instructors with disabilities should inform libraries and other content-providers when their resources are not accessible and should demand access to the content. They have to pinpoint the problem and request equitable educational conditions, since their motto is “nothing about us without us”.



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## **Legislation**

One of the most catalytic factor that affects library services for people with disabilities is legislation of each country. Most initiatives for equal information services for people with disabilities, access for all and the increasing number of students with disabilities to colleges and universities seem to result from the relevant disability legislation, such as Americans with Disabilities Act (ADA, 1990), Australian Disability Discrimination Act (1992), Disability Discrimination Act (1995) of United Kingdom and Special Educational Needs and Disability (2001). The law and student demands spur colleges to seek new design and approaches.

Since the beginning and mid of 1990, there have been several movements encouraging the social inclusion of people with disabilities, in which post-secondary institutions and their libraries have responded positively.

The sensitization of Greek nation for the disabled started almost at the end of the first half of 20<sup>th</sup> century (Darais, 2001) while until then provision for them was non-existent. In comparison with other countries, the right to education and information was recognized only a few decades ago. In particular, according to Act 904 passed in 1951 (the first law aiming at the support of the disabled), Greek government for the first time is obliged to take care and ensure the education of people with visual impairments. Because of this delay, Greek literature referring to the information seeking behavior of people with disabilities is quite meager.

Currently, even though United Nations' declarations referred to unhindered access to services, activities, books, leaflets and generally to information, students with disabilities continue to experience learning, academic and thereby, social exclusion (Kalantzi-Azizi & Tsinarelis, 1994). Unfortunately, legal barriers to full access have not been eliminated, especially when the copyright issue intervenes.

## **On-line Accessibility and Information Seeking Behavior of People with Disabilities**

Until recently, information on accessibility of web-based library resources was scarce. It was not until 1996 that accessible web design emerged as an issue in the professional library literature and in 1998 researchers began collecting data on the accessibility of library web sites and on-line resources (other than webpages) such as e-journals, databases, etc. Until 2002, there were few things published in the field of online accessibility research. Since then, several studies have been conducted so as to record accessibility and design issues and evaluate the accessibility of campuses, academic and public library webpages. Library literature presents a wealth of surveys of library services, web accessibility survey sites, manuals of best practice, case studies of individual libraries, etc.

As for the information seeking behavior or on-line strategies of the disabled, there is lack of literature dealing with these issues, although web accessibility is largely influenced by those parameters. For this reason, there is need to approach users with disabilities and explore their information seeking behavior so as to offer them information equity. Students with disabilities constitute a distinct and important group that, from time to time, have unique service expectations. By exploring their

information behavior, we are going to escalate the information gap between the print-disabled and the non-handicapped and optimize library's performance and delivery of information services. There is room for additional research that might investigate their varying information and communication needs and especially their interaction with on-line technologies, Internet and web-based resources (since the very visual nature of most web resources makes them potentially inaccessible).

In library professional literature, there is considerable discussion of Internet benefits and possibilities for people with disabilities. "Internet has the power to change the life of the disabled" and "microcomputers have been voted as the new saviors for people with disabilities". The positive influence of Internet in the life of people with disabilities is obvious (Grimaldi and Goette, 1999; Taylor, 2000). But, even though there are several studies that have examined the Internet's use, there is none that records systematically the way that people with disabilities use online services and a pool of other dimensions, such as:

- Which Internet services do they use more often?
- Which are the main reasons that they use the Internet?
- How does the level and type of disability affect user's perception of multimedia and web-based resources?
- Which are the on-line retrieval strategies that they adopt?
- Are they enough computer literate and what can be done so as to succeed it?
- Which is the searching process for disabled users of the web?, etc.

Electronic media should be a boon for people with disabilities but few colleges embrace the technologies that could help them. The loss of a sense influences the way a person reads, gets informed and more generally communicates. In such circumstances, people with disabilities rely on the rest of their senses and use information channels through their sight, sound and touch. Because of their difficulty in searching, browsing, retrieving and selecting material from resources designed for the able-bodied, it is quite obvious and logical that they choose the easiest information paths for them, since they do not have a lot of information choices. As everybody, they want to lead a productive life, to keep their mind alive and get educated. For example, if a blind student wants to access web-based resources, he would prefer doing it on his own, without relying on human readers or other mediators. People with disabilities desire real-time access to information and dream of being independent and self-determined learners.

### **Assistive Technologies**

Sometimes accessing web-based information depends on the appropriate adaptive or assistive technology that the institute or the user has at his disposal. Of course assistive technology cannot overcome barriers such as poor coding or design. When a web-based resource is poorly designed, it is not going to be accessible even if the user has the most advanced assistive technology. Nowadays, there is a maze of adaptive and education-based information technology, such as:

- Magnifiers
- Enlargement software
- Video magnifiers



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- Screen readers
  - Speech synthesis
  - Braille display (this device translates all the information that appear on a Windows screen in a series of eight Braille dots/ characters)
  - OCR
  - Braille embosser
  - CCTV (Closed Circuit Television)
  - Electronic notetakers
  - Braille translation software

## **Conclusion**

Students with disabilities, though present on campus previously in the past, have only recently become a focus of this diversification. These students present vastly different learning styles, physical accessibility needs and sensory differences that distance learning providers must take into consideration if they want to offer accessible and equal web-based courses and material. They need to stop making assumptions about this population and listen to its needs and expectations so as to result to the development and improvement of services. Conclusively, design for all and user centered design are the only design approaches that distance-learning education has to adopt. The target of their efforts should be the user's enforcement by placing the needs and demands of the disabled in the centre of the design process.

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