Distance Education, Web-Resources Design, and Compliance with the Americans with Disabilities Act

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Introduction

About 20% of the U.S. population, nearly 54 million individuals, have some kind of disability. For 26 million Americans, the disability is severe (McNeil, 1997). Despite recent increases in enrollment, people with disabilities are underrepresented in postsecondary education. Longitudinal data indicate that students with high-school diplomas are less likely to enroll in public four-year colleges, and that those who do enroll are less likely to graduate (Horn and Berktold, 1999). As Gadbow and Du Bois (1998) point out, a large majority of people under the age of 65 are intellectually capable of succeeding in postsecondary education, yet most have not attended institutions of higher learning.

With the recent advances in digital information technology, distance education could potentially open up unprecedented opportunities for this hitherto underserved segment of the population. This is particularly true for people with print disabilities, who, be it because of blindness, visual impairment or motor problems, have difficulties attending traditional on-site programs. With the help of screen readers (software that converts the text on the screen to voice or sends it to a Braille embosser) digitized text is, at least potentially, accessible to those who are unable to see print or who, because of a learning disability, have difficulty reading it (Mace, 1996; Sreenivasan, 1996). With suitably accommodated input devices, many individuals who cannot hold books or turn pages because of motor impairments are able to navigate even through very lengthy electronic documents.

Unfortunately, the very technology that has opened the door to unprecedented access also harbors the possibility for the very opposite. Just as there are enabling and disabling conditions in the physical environment, so are there conditions associate with digital technology that result in the inclusion or exclusion of certain people. Technology that is not universally designed, without consideration for the full spectrum of human (dis)abilities, is likely to contain access barriers for people with disabilities. For example, scanned-in image-based pdf files, which are frequently found in libraries' electronic reserves, are completely inaccessible to screen-reader users.

Coombs (2000) points out that there are at least four reasons to implement a technology that is accessible to the widest possible segment of the population: First, ethically

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speaking, it simply is the right thing to do. Second, it is the economically sensible thing to do—considering the extra cost involved in producing alternative versions of instructional materials. Third, it is the selfish thing to do: With advancing age, as our senses grow weaker and our mobility decreases, we all stand a good chance of becoming beneficiaries of a barrier-free information infrastructure. Fourth, as will be pointed out in the next paragraphs, the law demands that we do so.

Mandate for Accessible Online Resources under the ADA

Among the various pieces of legislation that speak to the need for an accessible information environment, the Americans with Disabilities Act (ADA) of 1990 is the most relevant for colleges and universities. Its Title II, which applies to public entities, requires that universities make their programs and facilities accessible to people with disabilities by stipulating, in general terms, that

> …no qualified individual with a disability shall, by reason of such disability, be excluded from participation in or be denied the benefits of the services, programs, or activities of a public entity, or be subjected to discrimination by any such entity (Section 202).

When Congress passed the ADA in 1990, the World Wide Web, as we know it today, did not exist. Most electronic information was provided in text format, which is easily read with screen readers. The potential barriers created by poor web design were certainly beyond the horizon of legislators and federal administrators. Thus, it does not come as a surprise that the ADA, while mandating equal access to an institution's resources, does not specifically address the design of web-based information services. Subsequent interpretations of the ADA, however, do.

In September 1996, the Civil Rights Division of the Department of Justice (DOJ) issued an opinion statement (letter #204) which directly addressed the issue of web accessibility. States and local governments as well as places of public accommodation are required to

> …provide effective communication, regardless of whether they generally communicate through print media, audio media, or computerized media such as the Internet. Covered entities that use the Internet for communications regarding their programs, goods, or services must be prepared to offer those communications through accessible means as well.

Perhaps the strongest support for the ADA's applicability to accessible web design is provided by the U.S. Department of Education, California Office for Civil Rights (OCR), in its letters issued in connection with a statewide ADA compliance review involving California colleges. Particularly instructive are the letters addressed to the Chancellor of California Community Colleges (CCC). One major concern addressed in these letters pertains to the acquisition of technology and expansion into distance education, including the Internet. The OCR criticizes that the practice of providing more and more information electronically, through the Internet or campus LANs, is often not accompanied by considerations for the barrier-free design of web pages that contain the information. As a remedy, the OCR suggests the development of access guidelines for distance learning and campus web pages:

> If guidelines to ensure access are made available to colleges now, such information on how to structure distance learning programs and campus WebPages will not only ensure that colleges meet their legal obligations but will also enable colleges to save significant expense over the later cost of "retrofitting" these programs after substantial investment has been made in inaccessible structures.

Typical online distance education programs contain several areas that need to be carefully planned to insure access to information for people with print disabilities: (a) institutional web pages, including those of the library, which provide general campus and program specific information; (b) web pages, often containing interactive features, for specific administrative purposes, such as enrollment, course selection and grade reporting; (c) web-based courseware packages, such as Blackboard or WebCT, each with its own architecture; (d) web-based instructional materials, such as electronic books, online journal articles and electronic reserve materials; (e) various online library resources, including catalog, full-text article databases, indexes to the journal literature, and other electronic reference tools.

Website Accessibility—Empirical findings

Among the five areas of resources listed above, web page design assumes a central role. Not only do web pages func-

tion as pathways to all the other resources; as institutional billboards, they also provide a good first impression of a campus' prevailing attitude and philosophy. It is for these two reasons—assessing web accessibility as well as gauging institutional awareness and sensitivity concerning barrier-free access for people with disabilities—that, in a recent study (Schmetzke, 2001a), I collected empirical data on distance-education providers' web site accessibility (set 1). It was for the second reason that I also looked at the web pages of twelve regional and national distance-education organizations (set 2), which can be assumed to set the tone for, or at least to reflect, what is currently happening in the field. Set 1 included the web sites of distance-education providers listed in Marcie Kisner Thorson's (2000) book "Campus-free College Degrees," a "guide to accredited college degrees through distance learning."

The accessibility of web pages was evaluated with Bobby, a tool created by the Center for Applied Special Technology. Bobby checks for compliance with the Web Content Accessibility Guidelines developed by the Web Accessibility Initiative (WAI). Sponsored by the World Wide Web Consortium (W3C), an international standard-setting industry body, the WAI guidelines reflect the input of many players and must be considered to be the most authoritative source on the subject.

The results of this accessibility study revealed major accessibility problems (referred to as "priority-1" errors by Bobby) associated with both sets: Of the total of 219 sites included in set 1, Bobby found only 15.1 % of the homepages to be free of major accessibility errors. When the pages directly linked to the 219 homepages were included (which made for a total of 3,366 pages), Bobby found 23.3% of the pages to be accessible. The average number of priority-1 accessibility errors per page was very similar for both the homepages and the wider set: The homepages contained 8.6 major accessibility problems per page; for the wider set, the average number of priority-1 accessibility errors was 7.8.

The web pages of distance-education organizations (set 2) were not paragons of virtue, either, as far accessibility is concerned. Only one of the 12 home pages received Bobby approval. When the pages directly linked to the homepages were included, 18% were found to be free of major accessibility problems. At five web sites, none of the pages received Bobby approval; at only one web site were all the pages accessible. The average number of major accessibility problems per page was 5.5 for the wider set.

The low level of accessibility reported above echoes the findings of earlier accessibility studies focusing on the web sites of general campuses, libraries, library schools, special-education programs and distance-education units (Schmetzke 2001b). The percentages of accessible pages varied from study to study, averaging between 14% and 59%. Rowland (2000) reports that data collected by Walden, Rowland and Bohman in November 1999 revealed that a mere 24% of web pages serving as "entry points" for distance-education students were void of major access barriers. Web accessibility at University of Wisconsin campus libraries averaged 31% and 40% (Schmetzke 1999, 2000). Interestingly, with 23%, the average web site accessibility at the nation's most highly rated library schools was far below that at the campuses' libraries, at which, on the average, 59% of the web pages were barrier-free (Schmetzke 2001b).

Clearly, web pages of distance education providers, including those of numerous libraries, contain many barriers for people with print disabilities. The web sites of regional and national distance-education organizations, which are looked at for leadership and guidance, are far from setting a good example. These web sites, just as those of the nation's top-notch library schools, tend to be highly inaccessible. It is difficult to take this inaccessibility as anything but an indication that not only distance-education providers (librarians included), but also their leaders and trainers, are unaware of the need for universal design. Furthermore, it is reasonable to assume that this lack of awareness does not stop at web pages but extents to all types of web-based resources (catalog, indexes, databases, etc.).

Strategies for Change

What can be done to make distance education more accessible for all students, including those with disabilities? I suggest a four-pronged approach—involving education, research, selective shopping, and advocacy for inclusive policies.

Education

Most players involved in the provision of distance education are not aware of the accessibility problems associated with electronic information sources. Until a few years ago, the issue was rarely discussed in the professional literature. While, more recently, a flurry of articles in the library has focused on accessible web design, the accessibility of all online information sources, as they were listed earlier, is far from being adequately addressed in current awareness-raising efforts.

Research

Little is known about the accessibility of web-based resources other than that of web pages. With a few exceptions, no research in this area has been conducted. The rare statements by online-product vendors tend to be vague and unreliable. Yet, judging from the responses I receive when broaching the subject with fellow librarians, there is much need for this kind of information. To many librarians, this issue has never occurred, and those who are aware of it (including myself), rarely know the answer. A special-theme issue of Library Hi Tech focusing on the accessibility of web-based library resources (catalogs, indexes/databases, e-journals, e-books, e-reserves, etc.) is currently being planned. Prospective contributors are encouraged to contact this author.

Selective shopping

All parties involved in distance education, including librarians, need to include accessibility as a criterion when making purchasing decisions concerning online services. The customer, especially when organized in form of a consortium, is still king. Shoppers for online resources need to exercise their purchasing power to demand barrier-free products. Most vendors of online products and services are currently unaware of this issue, and if they are aware of it, they may not want to dwell on it. With each contract under negotiation, vendors need to be asked what they have done to ensure the accessibility of their product for people with disabilities. Vague responses should be followed up with requests for more specific information, such as "With which commonly used screen readers has the accessibility of your product been tested?" Even better, a request for a demonstration would further underscore the seriousness that this issue is now receiving. Even if there are no accessible products currently available for a given need, it is important for purchasing parties to start sending the message to vendors that they do mean business, i.e., that sooner or later, the company which will first come out with an accessible version will have a clear advantage in the market.

Advocacy for Inclusive Policies

Advocacy for inclusive policies comes in different forms. In the case of California Community Colleges (CCC) referred to earlier, advocacy came in the form of a complaint to the OCR. In this particular instance, this approach was extremely effective. In 1999, three years after the OCR began its compliance review, CCC adopted an extraordinarily comprehensive and proactive policy entitled "Distance Education: Access for Students with Disabilities." Whereas other institutions' distance education policies often do not address access issues at all, or if they do, provide for ad hoc responses to the needs of students with disabilities, the CCC document calls for accessibility from the very onset:

> One of the primary concepts of distance education is to offer students 'Learning anytime, anywhere.' Therefore all distance education resources must be designed to afford students with disability maximum … access … 'anytime, anywhere' without the need for outside assistance.
>
> Distance education resources must be designed to provide 'built-in' accommodation where possible (i.e. closed captioning, descriptive narrative) and/or interface design/content which is accessible to 'industry standard' assistive computer technology in common use by people with disabilities (p. 13).

The wide scope of this policy should be of particular interest to libraries, which provide many of the resources used in distance education. The resources listed in the introductory part of this paper (online catalog, online indexes, full-text databases, etc.) fall, undoubtedly, within the purview of the CCC policy. The fact that many library resources are acquired or leased from third-party vendors does not make a difference. In fact, the language on this particular issue is absolutely clear: "Any distance education courses, resources or materials purchased or leased from a third-party provider or created or substantially modified 'in-house' must be accessible to students with disabilities … (p. 14)."

While, as the CCC case suggests, advocacy based on legal recourse may be very effective in some scenarios, it is not the strategy of choice that I recommend to the professional community. Too often, adversary measures backfire and end up hurting the cause. As an alternative, I suggest that we become adamant grass-roots lobbyists for more inclusive policies within our institutions and professional associations. By this I mean that we scrutinize all existing policies that may affect online access for people with disabilities (e.g., policies on distance-education, library online collection development, web design, and services for people with disabilities); carefully monitor ongoing revisions of such policies or the drafting of new ones; network among all parties interested in the issue; and exhaust all opportunities to bring the issue to the attention of the policy-making bodies.

This said, let me turn to the Association of College and Research Libraries' (ACRL) very own "Guidelines for distance learning library services." These guidelines not only reflect the professional views of the broader library and higher-education community, but they have also been influential in shaping individual libraries' policies and practices.

Given the broad-based input that led to the latest major (1998) revision of the ACRL "Guidelines," it is surprising that nowhere in its ten sections is accessibility for students with disabilities addressed. This also applies to the most recent version (2000): While the philosophy section underscores that "access to adequate library services and resources is essential" and the services section requires that library services "should be designed to meet effectively a wide range of informational, bibliographic, and user needs," disability-related access needs are not mentioned. One could argue that this is simply an issue too specific to be explicitly addressed in such a broad document, that this issue is covered by the general language of the "Guidelines," or that it is the task of other regulations, such as the ADA or disability-related campus policies, to address this issue. Such arguments are not very convincing—for two reasons: (1) The ACRL guidelines do address other specific issues, such as copyright fair use policy. Just as the authors of the "Guidelines" deemed it important to emphasize that "access to reserve materials" must be provided "in accordance with copyright fair use policy," could they not have included a similar statement that calls for universal design of online resources in accordance with the spirit of the ADA? (2) The low degree of accessibility of web pages found on distance education sites clearly indicates that most players involved in distance education lack awareness in this area. General language in policy documents may suffice when those who try to follow them already understand what is implied by the broader terms. But this is certainly not the case with regard to accessibility. Most librarians who read the current ACRL "Guidelines," or use them as the basis for their own policies, are likely to construe the mandate to provide "access to adequate library services and resources" only in terms of connectivity—as a mandate to provide off-campus access to the library network and the online resources for which it serves as a gateway. At the present, the additional concern that these very resources are only fully accessible if they have been properly designed does not occur to most distance-educators and librarians. The issue of accessible design of basic online library tools and instructional material is simply not on their radar screen. In order to get it there, another revision to the ACRL "Guidelines" needs to be made—inconvenient as this process may be. Such inconvenience is nothing in comparison to the sheer violation of rights currently experienced by many students with disabilities, who have computers in their homes, with modems that can connect them to campus/library networks and screen readers that could, potentially, enable them to utilize all the resources needed to succeed in academic programs—if the people who designed these resources, or who selected them, had been aware of everyone's needs.

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