

1. Accessibility

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The terms *access* and *accessibility* have been in circulation for at least a century, and their usage generally connotes availability and physical accessibility for a certain population (Guy, 1983). The word *access* in English originated from Latin, meaning “accession” (Hoad, 1996). In contemporary policy discourse in English, however, access is defined as making information and communication technologies (ICTs) widely available to all citizens (Wise, 1997). Echoing this meaning of access, the *Oxford English Dictionary* defines accessibility as “the quality or condition of being accessible (in various senses)” (Oxford University Press, n.d.). It further defines accessible as “capable of being conveniently used or accessed by people with disabilities; of or designating goods, services, or facilities designed to meet the needs of the disabled.” To discuss accessibility, understanding how access, accessibility, and accessible *design* have become common terms (with fluid definitions) in technical communication today is important. This essay will unpack these terms by considering both historical definitions and contemporary perspectives.

Not only do the terms access and accessibility have different meanings, but researchers also differ in how they relate the terms and establish their connection to disability. These differing views represent the perspectives of technical standards organizations, digital rhetoricians, disability activists, and disability studies-centered design scholars. The International Organization for Standardization (2014) defines accessibility as the “extent to which products, systems, services, environments and facilities can be used by people from a population with the widest range of characteristics and capabilities to achieve a specified goal in a specified context of use” (n.p.). James Porter, a digital *rhetoric* scholar, makes a distinction between access and accessibility. “Access,” Porter explains, “is the more general term related to whether a person has the necessary hardware, software, and network connectivity in order to use the Internet—and to whether certain groups of persons have a disadvantaged level of access due to their race, ethnicity, socioeconomic status, gender, age, or other factors” (2009, p. 216). Accessibility, on the other hand, “refers to the level of connectedness of one particular group of persons—those with disabilities” (Porter, 2009, p. 216). Porter also adds that “the reason to write/design for accessibility is not only to allow people with disabilities to consume *information*, but to help them produce it” (p. 216). Activists in the disability field do not always make Porter’s distinction. For example, the University of Leeds’ Centre for Disability Studies employs *access* as the search term for all accessibility-related entries on its website. Speaking from a disability

studies-centered design perspective, Sushil Oswal (2013) describes accessibility more broadly as “the ability to use, enjoy, perform, work on, avail of, and participate in a resource, technology, activity, opportunity, or product at an equal or comparable level with others” (n.p.).

As these varying definitions from different disciplines suggest, accessibility is shaped by a number of factors—which can change from context to context and are both spatial and temporal in nature: physical distance from resources and opportunities, the availability of *technology* and means to overcome that distance, and the infrastructural and legal resources to overcome barriers to workplace entry. For example, for full integration into society, a disabled person not only needs a job to support themselves and their family but also laws to protect them from discrimination by employers and providers of services, consistent access to adaptive technology and special training for holding on to a job, accessible opportunities to participate in recreational activities, and of course, availability of inclusively designed consumer goods for living a comfortable life (Wilson & Lewiecki-Wilson, 2001).

Since technical communication is preoccupied with design and communication of information, and since information is imbedded everywhere in human environments, the field’s scope extends into the accessibility of both the brick-and-mortar and digital spaces (Whitehouse, 1999). Accessibility in the former can consist of signage, directories, and spatial maps—digital and otherwise—whereas accessibility in the latter refers to a range of ICTs, including “computer hardware and software, digital broadcast technologies, telecommunications technologies such as mobile phones, as well as electronic information resources such as the world wide web” (Selwyn, 2004, pp. 346–347). The World Wide Web Consortium’s (W3C) web content accessibility guidelines (2.1) break down accessibility into four elements in terms of the interactivity of the web for the disabled user: perceivable, operable, understandable, and robust (Web Accessibility Initiative, 2019). Though W3C’s intent for these guidelines is to assist developers in designing accessible websites from the bottom up, more often, these are used for checking the accessibility of already built websites for the purpose of retrofitting them with accessibility (Wentz et al., 2011).

In technical communication practice, teaching, and *research*, accessibility has been advocated by the community members dedicated to the needs of disabled users. It is not often included in *user experience* design discussions, although it should be (Oswal, 2019; Zdenek, 2019). This exclusion might result from when and how accessibility is included in the design process—it is often an afterthought, or comes up as a result of a quality check at the tail end of the design cycle. In either of these situations, accessibility gets retrofitted to an already developed product and rarely results in an equitable user experience. Another problematic reason could be that the designers forgot to include disabled consumers among their imagined users. Such omissions are more common in professional practice than one would expect after all of the accessibility activism of the last three decades (Charlton, 1998; Finkelstein, 1993).

The growth of the World Wide Web in the last three decades has not only resulted in an information explosion, but it has also introduced new questions about access to any informational content for disabled users. Considering the central place of the web in technical communication work, the accessibility in this area can be broken down into several subcategories: web interfaces for assistive technology, such as screen readers and voice browsers; accessible data input, navigation, and content; intuitive page layout and design; and accessible web authoring and development tools. Another important area of concern is the design of human-computer interactions. While the World Wide Web code in itself is not inaccessible, the interactions it enables can erect access barriers, unless these interactions have been conceptualized with disabled users in mind. For example, screen readers can process both text and links on a webpage without a problem. Web code also permits alternative text descriptions for images, which can be read by a screen reader. However, when a designer attributes an interactive element to an image, such as a link, that interaction becomes inaccessible to the screen reader. Designers and developers often forget that screen readers are text readers and lack the ability to read and interpret images.

In conceptualizing different aspects of access and accessibility, it is important to pay attention to how the relating terms are operationalized. Thus far, design fields, including technical communication, have often operationalized definitions of *information*, *place*, *cyberspace*, and *accessibility* that exclude disabled users, or have left them open-ended and matter of situational interpretations in different social and technical domains (Janelle & Hodge, 2013, p. 3). The debate surrounding the definitions of accessibility is murky, and the disabled users are often left out of this discussion. Instead of a focus on how different users access and interact with spaces—virtual or not—researchers are more interested in studying the changes in these technologies.

It is also important to note that accessibility is different from universal design (UD). On the surface, the design practice based on UD suggests access for all, hence the nomenclature “universal design.” However, when put to practice loosely for divergent purposes, it can easily be reduced to a checklist for legal compliance, lead to tokenism, and water down the original intent of UD principles (Connell et al., 1997; Mace, 1985; Oswal & Melonçon, 2017; Sandhu, 2011). Take, for example, the accessibility for wheelchair users: The ramp designs and locations are seldom conceptualized according to the convenience of their users, and are rarely integrated into the original design of buildings in a way that doesn’t stigmatize, or separate, this user population. Even the signs for these problematically located ramps are often hidden, or are hard to read from the position of the wheelchair rider. A good example of the pervasive tokenism toward blind and visually impaired users in contemporary architectural design is the use of braille and large print even though spatial access is affected far more by layout, acoustics, and ambient lighting. Most buildings have only one design feature that relates to this group—braille signs, which are often mounted upside down, might display

inaccurate information, or are placed so far from the intuitive locations that blind users might fail to find the sign by touch. Tactile maps are rare, even in university and public buildings serving thousands of people and constructed at the expense of tens of millions of dollars. Seldom are indoor and outdoor public spaces designed for users with a range of common mental, *visual*, and hearing disabilities, and they often give unending grief to these users due to their confusing layouts, odd features (four steps up and then three steps down, requiring unnecessary exertion), and unexpected location of specific amenities such as restrooms, elevators, and information desks.

In the context of learning spaces, curricular, and pedagogies, the universal design debate has another accessibility dimension. This debate has its origins in the universal design for learning (UDL) movement, which built on the universal design principles for built environments (Gronseth & Dalton, 2019; Rose, 2000). While the UD principles were directly rooted in the accessibility of built environments for disabled users, UDL was developed to meet the legal mandate to provide secondary education to all children (Individuals with Disabilities Education Act, 1997). Consequently, the developers of UDL focused on the learning environment rather than the individual needs of disabled students. They did not see accessibility as a part of design, as is obvious from the following claim: “accessibility is a function of compliance with regulations or criteria that establish a minimum level of design necessary to accommodate people with disabilities” (Salmen, 2011, p. 6.1). While there are exceptions, many researchers in this group strongly differentiate between universal design and accessibility because their focus is on the technology of universal design rather than its users. For example, during the COVID-19 pandemic, UDL has been inserted in many discussions about remote teaching in higher education without a regard for accessibility (Dickinson & Gronseth, 2020).

UD argues for simple and intuitive use requiring no special technological *knowledge*, language proficiency, or mental concentration. Though it makes claims of equitable use that doesn’t isolate, stigmatize, or disadvantage a particular group, it often sacrifices the accessibility needs of users with severe disabilities to accommodate all other constituencies on this omnibus version of universal design. It seems to accommodate everyone, but due to the watered-down affordances of such design, more often it only succeeds in serving the needs of users with less severe disabilities. Universal design has so many other ambitions—“improved design standards, better information, and new products and lower costs” (Greer, 1987, p. 58)—that distract it from the purposes of accessibility and accessible design for disabled users. The universal design advocates critique design approaches that compensate disabled people’s functional limitations (Connell & Sandford, 1999; Salmen & Ostroff, 1997; Weisman, 1999). Despite their assertions about not stigmatizing disability and accessibility, universal designers reflect similar attitudes by pushing disability under the rug (Steinfeld, 1994). These universal designers forget that many disabled people

see their disability not only as a bodily or mental limitation, but also a mark of identity and pride (Brown, 2003; Charlton, 1998; Fleischer & Zames, 2011; Johnson, 1987).

As the emerging literature on sensory architecture has begun to inform us, blindness is not necessarily an absence (Pallasmaa, 2012). Architecture as seen from the combination of other senses—sound, touch, smell, and taste—can be luxurious. But in spite of all the developments in phenomenological *sciences* about the multisensory aspects of human perception, neither the designers of the physical, nor of web *structures*, have a standard practice of engaging disabled users in early phases of project development (Oswal, 2014; Pallasmaa, 2012). The participatory design movement has been with us for half a century (Ehn, 1989, 2017), but designers and developers of built environments, technologies, and websites have seldom made a concerted effort to involve disabled users as co-designers and knowledge partners (Chandrashekar et al., 2006; Krantz, 2013; Lewthwaite et al., 2018; Oswal, 2014; Sahib et al., 2013). Architects could learn a great deal through participatory design with disabled users drawing on their experiential and embodied knowledge about spaces.

Stressing the fact that prevalent designs fail users with severe sensory disabilities such as blindness and deafness sounds redundant. However, without attention to their particular accessibility needs, no design can be assumed inclusive, accessible, and complete. On the other hand, meaningful accessible designs that don't depend on the ocular and aural experiences alone can open new paths for blind and deaf users to enjoy fuller embodied experiences both in virtual and physical spaces. The opportunity to access fulfilling experiences of this nature can result in blind and deaf users creating a centerspace for themselves as designers and creators to share their multisensory perspectives to build interiors, public spaces, and digital sites with the design community, thus altering the current one-way traffic between designers and users into an enriching exchange of ideas (Butler, 2016; Doiphode, 2019; Oswal, 2019).

The technical and professional communication field can not only expand its footprint into accessible web design practice by preparing students in this area, it can also command a leadership role through laboratory and field design *collaborations* with disabled users, designers, and industry practitioners to standardize methods for accessible web development, conceptualize accessible digital interfaces within physical spaces with architects and interior designers, and partner with urban planners to imagine disabled-friendly open spaces employing ubiquitous technologies.

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