PRACTICE BRIEF
AccessDesign: A Two-Day Workshop for Students with Disabilities Exploring Design Careers

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Abstract

A two-day pilot workshop called Access to the Design Professions for People with Disabilities (*AccessDesign*) was conducted for high school and college students with disabilities in Seattle. The goal of the workshop was to increase the pipeline of design professionals with disabilities by recruiting students with disabilities into postsecondary design education. It was supported by the DO-IT Center and a grant from the National Endowment for the Arts (NEA), as well as participating organizations and individuals. The two-day workshop highlighted design education options one day and design careers the next. Evaluation data suggest that participant understanding and interest regarding design fields and knowledge about accommodations increased. Students enjoyed opportunities to network and were particularly interested in design examples related to accessibility. They were also interested in learning more about general issues related to college such as admissions and financial aid. These lessons could improve future programs offered by the DO-IT Center as well as other practitioners.

Keywords: Disability, higher education, recruitment, design careers, career exploration, transition

Individuals with disabilities experience far less career success than their nondisabled peers (National Council on Disability and Social Security Administration, 2000; National Science Foundation, 2002; Office of Disability Employment Policy, 2001). They are less likely to complete postsecondary education and pursue academic studies in science, technology, engineering, and mathematics (STEM) and experience a higher drop out rate (National Science Foundation, 2002, 2006; SRI International, n.d.) than their nondisabled peers. STEM includes design fields such as those in architecture, graphic design, industrial design, landscape architecture, and web design.

Success stories of individuals with disabilities engaged in STEM fields demonstrate that opportunities do exist for those who develop academic, technical, and self-determination skills and devise strategies to circumvent barriers imposed by inaccessible facilities, instruction, and resources; inadequate accommoda-

tions; and lack of encouragement and access to role models (DO-IT, 1993-2011; Ostroff, Limont, & Hunter, 2002; Stern & Woods, 2001). Unless access issues are adequately addressed by the institution, challenges related to physical access and inaccessible information technology (IT) may be faced by those with mobility impairments; challenges related to print and multi-media access may be faced by individuals with visual impairments; audio content may create problems for students with limited hearing; and resources provided in a single format may produce difficulties for students with learning or attention disabilities. Each of these challenges has well-documented solutions, such as guidelines for making computers and online resources accessible to everyone (World Wide Web Consortium, 2008).

Problem Addressed by Pilot Workshop

Although some programs, including those offered by the DO-IT Center at the University of Washington

(UW), promote STEM academic and career fields to students with disabilities, few opportunities exist to expose students with disabilities to specific careers in design fields and to reasonable accommodations to ensure access to these careers. In June 2011, DO-IT partnered with Access to Design Professions, Institute for Human Centered Design, (IHCD) Boston, MA to conduct a two-day workshop called Access to the Design Professions for People with Disabilities (*AccessDesign*) so that students with disabilities could explore a wide variety of design careers and the education needed to pursue these careers. It was supported by the DO-IT Center, a grant from the National Endowment for the Arts (NEA), and participating organizations and individuals.

The workshop was open to all interested students with disabilities in high school or college and advertised through DO-IT's existing, extensive networks of high school, community college, and university students with disabilities and educators. For example, invitations were distributed to two DO-IT e-mentoring communities, where students with disabilities engage via email with mentors and DO-IT staff as they move through critical junctures to degrees and careers. Through these communities students learn about internships and scholarships, self-determination skills, and the availability of advisors and other support. Invitations were also sent to local high school teachers and college disability services professionals.

Four high school students and eleven college students attended the workshop. At least eight of the students were either in high school or in college but undecided on their major. Six students had mobility impairments; four students had learning disabilities; three students had attention deficits; one student had a hearing impairment; and one student had a traumatic brain injury. Eight of the students were female and seven were male.

Strategy

One day of the workshop focused on education options and another on career options in design topics (see Figure 1). During the first day of the workshop, held on the UW campus, participants learned about academic programs in design fields at UW and other institutions, including community colleges. Over the course of the day, students met with advisors and faculty in design fields, talked to current students and recent graduates of design programs, learned about other campus resources, and participated in a hands-on design activity to learn about accessibility and universal design.

The second day of the workshop took place at an architecture firm where students learned more about careers and career paths in design fields. In addition to a panel presentation of professionals from a variety of backgrounds and informational interviews with professionals in many design fields, students toured the facility and saw several demonstrations of technology currently being used in architecture firms.

The two-day workshop provided students with many experiences in which they could learn about academic programs, campus resources, design technology, and career paths in design fields as well as network with other students and professionals. Students also learned about strategies for confronting accessibility challenges from students, design professionals, and disability services staff.

Participating faculty and professionals were invited to join either of two peer groups. The first was the STEMed Community of Practice (CoP) of K-12, consisting of postsecondary educators interested in promoting the participation and success of students with disabilities in STEM fields. The second was the Industry and Career Services CoP, populated with employers and career services staff interested in increasing the opportunities and success of people with disabilities in internships and careers, especially those in STEM fields. Thirteen of the presenters joined one of the CoPs. On these email discussion lists, topics for discussion have included universal design, informal science education, and disability disclosure. Similarly, student participants continue to engage in DO-IT's e-mentoring communities. Two participants who had not previously been members of an e-mentoring community chose not to join one.

Participant Feedback

Qualitative Data

At the conclusion of the workshop, students wrote thank you notes to presenters. In this correspondence, several students expressed their enthusiasm for the connections that they made and requested stationary to write to more than one presenter. In addition, comments on post-workshop surveys suggested increased participant awareness of the diversity of career options within design as a result of the workshop.

Quantitative Data

Students were asked to complete a survey before and after the workshop. Ten completed the first survey,

Access to the Design Professions for People with Disabilities

Day 1 – University of Washington Campus
9:15 – 10:15   Learn about Design Majors and Degree Programs from Faculty and Advisors
10:30 – 11:45   Panel of Students & Recent Graduates in Design Fields
11:45 – 12:45   Lunch
12:45 – 2:45   Investigating Entryways Activity
3:00 – 4:00   Resources on Campus

Day 2 – Architecture Firm
9:00 – 9:15   Welcome
9:15 – 10:30   Panel of Professionals in Design Fields
10:30 – 12:00   Firm Tour & Demonstrations of Technology
12:00 – 1:00   Lunch
1:00 – 2:30   Informational Interviews with Professionals
2:30 – 3:30   Industrial Design of Mobile Phones
3:30 – 4:00   Thank You Notes, Evaluation, and Concluding Remarks

Figure 1: AccessDesign Workshop Agenda

and seven completed the second one. No identifiers were included on the surveys, but with the small number of participants, using the demographics (sex, race, year in school, high school or college, disclosure of a disability), post surveys could be matched with pre surveys, permitting repeated measures analysis of variance.

With such a small number of participants, the power to detect a statistically significant change in any of the outcome variables is limited. For this reason, both changes reaching statistical significance (*p<.05) are noted as are changes that seem to be trending toward significance (^{T}p<.10).

Figure 2 shows the percentage of participants indicating that they "agree" or "strongly agree" that they are interested in each career. This figure shows that the workshop significantly enhanced the participants' interest in careers in urban planning $(F(1,6)=15; p<.01)$ with trends toward enhanced interest in landscape architecture and industrial design $(F(1,6)=4.5; p<.10)$. Interest in graphic design and interior design may have diminished somewhat, though these changes did not approach statistical significance at p<.10.

Participants were asked whether they knew what accommodations they needed to be successful in college or in a design field and how to request a needed accommodation (see Figure 3). Most of the participants already knew what accommodations they needed to be successful in college and how to request them when they entered the workshop.   All of the participants knew what they needed for college and how to request an accommodation when exiting the workshop. Not quite half of the participants knew what accommodations they would need to be successful in a design field and this figure doubled by the time they left the workshop $(F(1,6)=4.5; p<.10)$.

Lessons Learned and Replication

Organizers of the *AccessDesign* workshop made the following observations regarding the parts of the workshop that were the most beneficial to student participants.

- Students enjoyed the opportunities to network and took advantage of the informational interviews and other chances to talk to professionals.
- Some students brought examples of their art or design work to show others, which served as a starting point for conversations with design professionals.
- Students were particularly interested in the role that design professionals play in making the world accessible to individuals with disabilities.
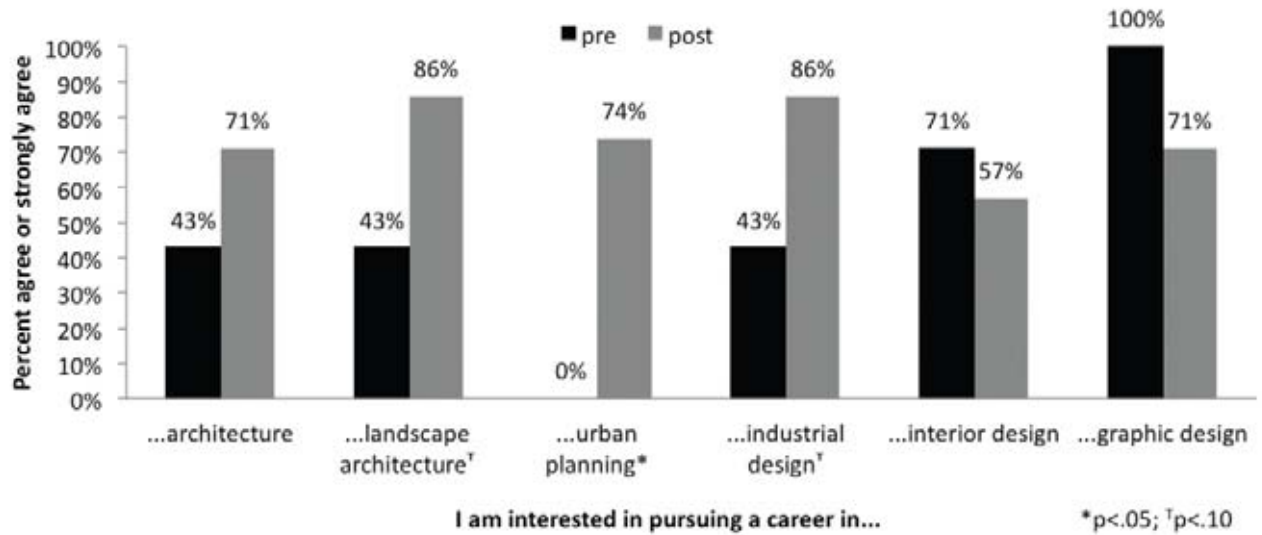
Figure 2. More students were interested in urban planning, landscape architecture, and industrial design after the workshop.
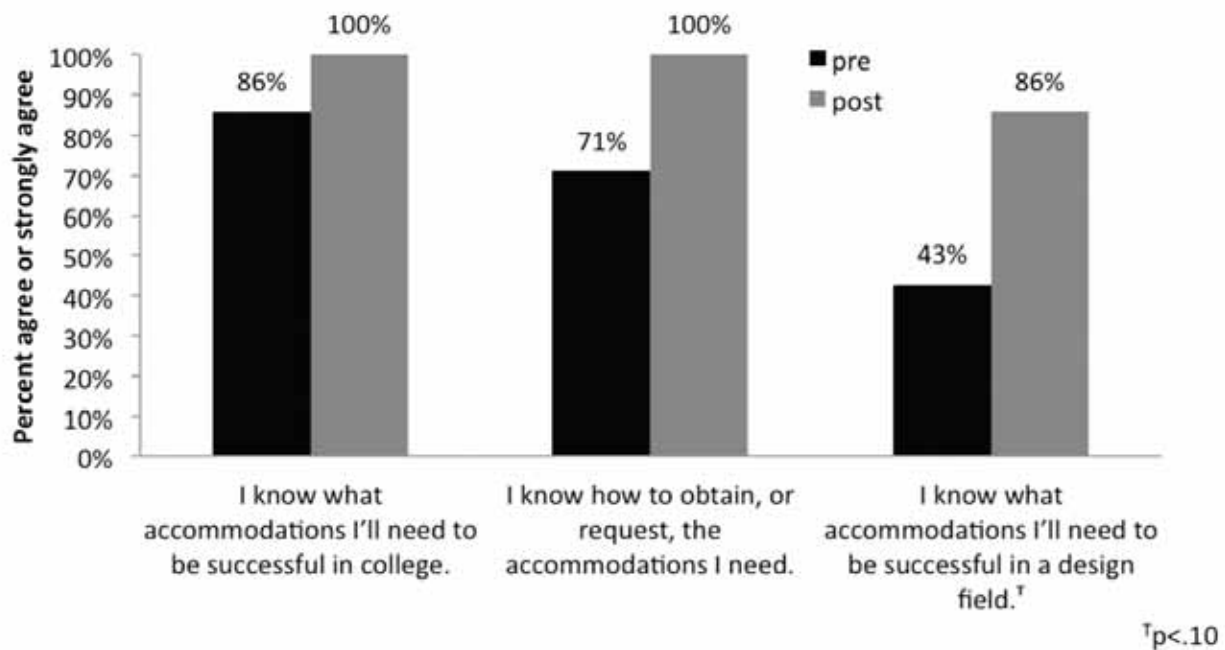

Figure 3. Most students were aware of the accommodations they will need in college; less so those they will need in the field.

- In addition to the information about design degree programs, students were interested in learning more generally about college including the application process, disability services, and financial aid.

Universities and other groups could replicate an event similar to *AccessDesign*. Partnerships between education institutions and design professionals are important so that students can be exposed to information about training and career options. Connect with educators, including high school personnel, who can help to recruit students with disabilities who might be interested in design fields. Include opportunities for students to network. These interactions can be facilitated by suggesting topics for discussion or encouraging students to bring examples of their work. Encourage design professionals to include examples relevant to accessibility. In addition, include general information about attending college. Consider contacting professional organizations or local organizations who do work related to disability to locate professionals with disabilities to participate.

Implications and Further Information

The results of the pilot workshop suggest that some students with disabilities are eager to learn about academic and career options in design fields. Providing information about both careers and academic requirements, engagement with professionals in design fields, and knowledge about potential accommodations helps students visualize themselves in design careers and how they might get there. Organizations planning similar events can benefit from the student feedback and lessons learned from the *AccessDesign* workshop.

Some of the students who participated in *AccessDesign* have participated in a longitudinal tracking study conducted by DO-IT. Follow-up with these students related to the longitudinal study could offer further evidence about the impact of the workshop on participants' education and careers. If future *AccessDesign* workshops are held, additional data could be collected about the effects of the workshop on participants' self-determination skills and strategies for any encounters with potential barriers.

Further information can be found at the *AccessDesign* web page at http://www.washington.edu/doit/stem/access-design.html.

References

DO-IT. (1993-2011). *DO-IT* Snapshots. Seattle: University of Washington. Retrieved Sept 1, 2011, from http://www.washington.edu/doit/Snapshots/

National Council on Disability and Social Security Administration. (2000). *Transition and post-school outcomes for youth with disabilities: Closing the gaps to post-secondary education and employment.* Washington, DC: Author.

National Science Foundation. (2002). *Women, minorities, and persons with disabilities in science and engineering*. Arlington, VA: U.S. Government Printing Office. Retrieved Sept 1, 2011 from http://www.nsf.gov/statistics/nsf03312/

National Science Foundation. (2006). I*nvesting in America's future: Strategic plan FY 2006–2011.* Arlington, VA: Author.

Office of Disability Employment Policy. (2001, November). *Improving the availability of community-based services for people with disabilities.* Washington, DC: Author.

Ostroff, E., Limont, M., & Hunter, D.G. (2002). *Building a world fit for people: Designers with disabilities at work.* Boston, MA: Adaptive Environments Center.

SRI International. *Reports and products and data tables.* Menlo Park, CA: Author. Retrieved Sept 1, 2011, from http://www.nlts2.org/products.html

Stern, V., & Woods, M. (2001). *Roadmaps and rampways.* Washington, DC: American Association for the Advancement of Science.

World Wide Web Consortium. (2008). *Web content accessibility guidelines, 2.0.* Retrieved Sept 1, 2011, from http://www.w3.org/TR/wcag20/

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Authors' Note