

Implementing Universal Design in Higher Education: Moving Beyond the Built Environment

A report developed by the Universal Design Think Tank

Hosted by the Association on Higher Education And Disability

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Abstract

Universal Design (UD) is a new approach to educational access that is receiving a great deal of attention. At this point, it is in its exploratory stages in the context of higher education. In recognition of the potential importance of this new paradigm and the need for focused initiatives in the field, a UD Think Tank was formulated and hosted by the Association on Higher Education And Disability (AHEAD). This report is a summary of the work of the UD Think Tank pertaining to the needs and interests of the readership of the Journal of Postsecondary Education and Disability. The report suggests starting points and future directions for scholarly activity in the field.

The term *Universal Design* (UD) is being used with increasing frequency by disability service providers in higher education. Once a topic pertaining solely to the domains of architecture, interior, landscape, and product design, conversations about UD in higher education have begun to crop up in such diverse areas as student services, information dissemination, web page design, and instruction. Further, professional dialogue reflected in conference presentations, grant proposals, academic articles, and listservs reveals burgeoning interests and initiatives in UD.

Work in the area of UD is being approached from differing perspectives. Some applications of UD are drawing heavily on the architectural roots

of the concept and are building on the Principles of UD (North Carolina State University, 1997). Others are looking more holistically at what “universal” might mean in a higher education setting and exploring inclusive strategies. Across these varied approaches and applications, there are some common threads in our understanding of UD. Most important, a UD philosophy recognizes that with enhanced awareness and knowledge, many aspects of the educational environment can be designed from the outset to be more inclusive of students with disabilities. The possible outcomes of this proactive approach to educational access are promising and include the potential for reduced barriers to learning, decreased time and cost of retrofitted

accommodations, the development of new partnerships when considering inclusive design, compatibility with broader campus initiatives to support student diversity, and the tacit message to students with disabilities that they are welcome in the higher education environment.

Despite excitement about the potential of this new approach to educational access, as with any emerging initiative, there is much that we do not know. UD is in its exploratory stages in the context of higher education. In recognition of the potential importance of this new paradigm and the need for guidance in the groundswell of activity surrounding the concept of UD, a UD Think Tank was formulated. This group, hosted by the Association on Higher Education And Disability (*AHEAD*) convened on July 8, 2002 in Washington, DC, and again as a subgroup on November 7, 2002 in Boston, Massachusetts.

This summary of the work of the UD Think Tank reflects a dialogue on the vision and potential of UD, approaches to expanding inclusive environments, and a host of questions and unknowns that need to be explored. The report is not intended to be a conclusive or authoritative document on the topic of UD. Rather, it is a discussion of the potential of this paradigm to offer a broader view of educational access, explore the possible barriers to achieving change, and provide recommendations for future directions.

The report is also a call for action. The recommendations of the UD Think Tank do not suggest wholesale adoption of this new and emerging framework in the field. Rather, through this report, we are dispatching a call for disability service providers, students, and researchers to work collaboratively to examine and explore this framework. *AHEAD* is considering the implications of this call for action across its many constituents. The purpose of this report is to target the needs and interests of the readership of the *Journal of Postsecondary Education and Disability* by providing some suggested starting points and future directions for scholarly activity in the field.

A “think tank” is an organization or group called to “solve complex problems or predict or plan future developments” (Steinmetz et al., 1998). This methodology section describes the formation of the UD Think Tank and the process used to develop the foundational statements and recommendations that follow.

Participants

The participants represented a diverse group of individuals with expertise and experience in the concepts of UD, reflecting a cross section of professionals ranging from directors of disability services offices to college faculty, administrators of non-profit organizations, and staff of campus-based teaching and learning centers. They contributed their experience and expertise in the diverse areas of instructional technology, UD, teaching and learning, higher education, and a broad range of disabilities. Participants paid their own travel expenses in order to attend UD Think Tank meetings (see Appendix A for a list of participants).

Goals

The purpose of the UD Think Tank was to bring together diverse individuals with experience and expertise related to UD to explore and provide direction for future applications of UD in higher education. Specifically, the Think Tank was charged with considering the current status and future potential of UD in diverse arenas of higher education. The group conversed about the role of disability service providers in providing campus leadership to promote UD. Finally, the group generated a list of recommended directions that *AHEAD* might pursue in exploring and promoting the development of this approach as a tool in equalizing educational access.

Preparation for Meeting

In preparation for the Think Tank, participants agreed that defining how we conceptualized “disability” was essential to constructive dialogue. A sociopolitical model of disability (Gill, n.d.) was identified (see Appendix B). Additionally, it was

agreed that the group would use the Principles of UD (The Center for Universal Design, 1997) as a starting point for dialogue on the topic of UD (see Appendix C).

Participants also concurred on a vision statement to guide the work and the direction of the group. Prior to the initial meeting, the group was provided with a draft vision statement, with agreement that the focus of the UD Think Tank would be to envision higher education communities that value the concept of UD and are willing to work to infuse UD principles into all campus environments.

Activities

Using the Principles of UD (The Center for Universal Design, 1997), the sociopolitical model of disability (Gill, n.d.), and the vision of inclusive higher education communities described above, participants came together in Washington, DC, in July 2002 for a full-day working session. A tight agenda and careful facilitation supported the dialogue among the diverse participants. The group was led through a series of questions and topics for discussion that included indicators of success in moving toward the vision of inclusive environments, current practices and examples of UD, barriers to achieving implementation of UD, and existing and potential applications of the Principles of UD (The Center for Universal Design, 1997) in the instruction and information environments. The role of disability service providers in assuming leadership roles in the area of UD was also discussed. Group dialogue was synthesized on flip chart notes and recorded in more detail by two designated notetakers.

After the meeting, group notes were synthesized and distributed to the participants for review and feedback. A followup meeting was scheduled in November, 2002 with a subgroup of the UD Think Tank to consider specific issues and recommendations in more detail. Notetakers documented the discussion and group notes were distributed to the entire UD Think Tank for input and feedback.

Outcomes

The following report and recommendations are an outcome of the process described above. They reflect aspects of the Think Tank's work that are relevant to the future formation and direction of scholarship pertaining to UD.

Vision

The role of a vision statement is to provide focus and direction for the activities of a group. The ideal described in the vision statement can not be achieved in a short time frame, but serves as a guide that challenges current practices and remains slightly beyond reach (Senge, 1990). According to Senge (1990), when a vision is embraced by a group, "the gap between vision and current reality generates energy for change" (Senge, 1990).

The following list was generated by the UD Think Tank in response to the question "*How will we know when we have achieved our vision of infusing principles of UD in all campus environments?*"

1. People with disabilities do not need to constantly advocate for access.
2. The criterion of a "reasonable" accommodation becomes moot.
3. Curriculum materials and resources are available in alternative formats as a de facto standard and are provided through a broad range of offices across campus.
4. Every student takes advantage of a universally designed product, classroom, or feature. Students with and without disabilities use the same design, and no one is stigmatized as having "special" needs.
5. Students with disabilities are included in instruction and learning beginning on the first day of class instead of having to wait for accommodations before being able to fully participate.
6. Each campus has the facilities and support to make materials available in alternative formats as a proactive part of preparation and dissemination.

7. Higher education environments have significant numbers of faculty, staff, and students with disabilities.
8. No one wastes time and energy negotiating physical and virtual access or navigating the campus environment.
9. The focus of the campus community is on effective teaching and learning for all students instead of on the provision of legally mandated accommodations.

Foundational Concepts about the Nature of UD

In the course of dialogue a number of statements about the nature of UD emerged from the group. Some of these foundational concepts were generated as the group shared knowledge and experience with existing applications of UD. Others were identified as myths or misperceptions that need clarification or eradication. Recognizing that UD is a relatively new concept, and that misunderstandings can prevent a clear examination of the issues, Think Tank participants articulated a number of underlying assumptions that guided the group's discussion. The resulting statements about UD are presented as suggested common starting points for dialogue, implementation, and research in the field.

1. *The word "Universal" in Universal Design reflects an ideal.* Participants in the Think Tank discussed a common misperception about UD that the word "universal" means that UD will be a panacea for all access problems in higher education. However, we know from the extensive experiences and applications of UD in the built environment that no environment can be made completely accessible to all individuals. The intent of UD is to provide a framework for designing and developing educational environments that are more inclusive, but that can always continue to be enhanced and made more inclusive.
2. *UD embraces an interactional model of disability.* UD is premised on the notion that good design considers the needs of the users of the end product. It acknowledges that disability and other aspects of diversity are an expected part of human existence. Thus, educational environments should be designed to be functional for the student population, including students with disabilities.
3. *UD is a framework for designing and developing inclusive environments rather than a prescriptive set of procedures.* Think Tank participants talked at length about the importance of viewing UD as a framework for thinking about and developing inclusive practices. Developing UD strategies and approaches across the diverse contexts of higher education is an evolving process, and providing a list of "quick tips" for implementing UD is not a recommended practice for the field.
4. *UD is not synonymous with technology.* Participants discussed a misperception in the field that UD is synonymous with technology. UD does not require the use of technology, nor does the use of technology necessarily indicate that an educational environment has been universally designed. Instead, technology is an educational tool that may facilitate instruction and learning as a flexible medium for conveying information. Application of UD in the higher education environment needs to be broadly conceived to include the full spectrum of instruction and learning.
5. *UD is a proactive approach to eliminating unnecessary barriers in the educational environment.* Participants discussed the importance of distinguishing between eliminating unnecessary challenges in the environment and lowering academic standards. UD involves removing barriers that are not essential to the educational context and do not compromise academic standards.
6. *UD is not a guarantee of student success.* Participants emphasized that UD does not change the value system within the field of postsecondary disability services for recognizing the diversity of abilities among students with disabilities. This includes the long-held belief that we are not trying to "save" or "rescue" students and cannot guarantee that equal educational access will result in student success.

7. *UD will not eliminate all disability access needs, including the need for a campus disability services office.* Participants agreed that “universal” is an ideal, and that UD will not eradicate all disability-related needs on college and university campuses. The proactive and inclusive emphasis of UD will potentially change the work of disability service providers, but it will not conflict with disability rights or dilute disability entitlements. UD and accommodations will likely interact but not preclude each other in all circumstances.
8. *Applications of UD in the higher education environment need to be validated through systematic research.* There is strong precedence for using UD to create more inclusive features in the built environment. Participants observed the current lack of empirical support for UD in higher education and expressed the need to systematically examine the effectiveness of applications of UD in the diverse realms of higher education.

Role of the Disability Service Provider

As part of the dialogue about promoting change and the implementation of UD, a number of possible roles for disability service providers were discussed. In the following list, some of the suggested roles will be familiar to professionals experienced in promoting the disability agenda in higher education while other suggestions for promoting UD may reflect new roles.

The disability service provider may promote the adoption of UD by serving as:

1. *Marketer.* Disability service providers could actively promote UD on college and university campuses by sharing information, including examples from other fields and other campuses.
2. *Coalition builder.* Other beneficiaries of UD on campus could be identified by disability service providers and approached as potential partners. Networking with colleagues, including key administrators, is recommended.
3. *Cost analyst.* A cost-benefit analysis conducted by disability service providers documenting the return that might be expected on the invest-

ment of making systematic changes through UD could provide powerful support for campus change.

4. *Consultant.* Disability service providers can supply faculty and faculty development personnel with information and support about UD. Such information should emphasize that the more universally designed a course is, the closer the pedagogy comes to meeting the needs of all students.
5. *Main player.* Disability service providers could take a leadership role in promoting UD from its inception on campus. This will require disability service providers to be knowledgeable about UD, UD resources, and current initiatives and procedures being implemented on other campuses.
6. *Monitor.* Being aware of new activities on campus and listening for opportunities to incorporate UD in new initiatives could be beneficial activities for disability service providers.
7. *Environment specialist.* When disability service providers understand the systems and structures for implementing change on their individual campuses, they are in a better position to influence campus policies. Disability service providers could form rapport with the change agents on campus and be involved with key committees or structures such as information technology, academic computing, publications, public relations, communications, curriculum, campus governance, and policies and procedures.

Barriers to UD

Participants identified possible barriers to promoting a UD approach to educational access. It is important to be cognizant of these potential roadblocks to change in order to design new systems and approaches that are supportive.

1. Barriers within the disability services office:
 - a. A focus on minimal legal requirements.
 - b. A one-person disability services office or an office experiencing consistent work overload with no time or energy for a campuswide vision of change.

- c. Lack of knowledge of institutional priorities and resources, even in the presence of positive attitudes about UD.
 - d. Lack of background in teaching and learning.
 - e. Lack of information and resources on UD.
2. Barriers within the institution:
 - a. Union issues and regulations that include specifications about employee activities hindering new ways of doing things on campus.
 - b. Attitudinal barriers including a suspicion that UD means more work and lower standards.
 - c. Lack of buy in and ownership for the educational access of diverse learners.
 - d. The perception of high costs involved with UD.
 - e. A focus on minimal legal requirements.
 - f. Lack of support and reinforcement for faculty interested in making their teaching more inclusive.
 3. Barriers within the field of postsecondary disability services:
 - a. A perception that disability identity and culture are devalued by supporting UD.
 - b. Fear of losing individual accommodations and civil rights protections in a UD environment.
 - c. Limited knowledge about implementation strategies and outcomes of UD.

signed from the outset to be more inclusive of students with disabilities, including such areas as the physical, informational, and instructional domains.

2. *Look broadly at environmental factors that support or create barriers to achieving the comprehensive systemic change called for by UD.* Explore the perspectives of and impact on varying constituents, including students, faculty, disability service providers, and administrators.
3. *Collaborate and draw on expertise across professional boundaries.* Find allies or partners who are important for infusing UD into the higher education environment. Promote connections on campus with such areas as facilities, faculty development, student affairs, support services, and so on. Tap perspectives, expertise, and resources to achieve mutual benefits.
4. *Build consumer input and feedback into all initiatives and research activities.* In the domains of architecture and product design, UD has placed a high premium on consumer input and feedback. Explore how user-centered design can be incorporated into the diverse areas of higher education.
5. *Develop models and exemplary cases that illustrate the application of UD in diverse areas of higher education.* The field needs to have clear and comprehensive models of classrooms, policies, strategies, and so forth, that illustrate inclusive environments.
6. *Pursue lines of inquiry for research.* Possible suggestions include:
 - a. Questions about implementation of UD
 - What are the most effective training materials and resources for promoting the development of UD?
 - Which context variables within postsecondary environments support implementation of UD?
 - What are effective partnerships that enhance development and implementation across higher education settings?
 - What resources do disability services professionals need?

Recommendations for Future Research and Scholarship

In the course of dialogue Think Tank participants were excited about and committed to the potential of the UD paradigm. At the same time, there was also significant questioning about how to proceed with caution in order to permit the field's knowledge base to build and guide the implementation of UD in higher education. The following suggestions are provided to guide future research and scholarship.

1. *Examine and explore the applications of UD across diverse environments in higher education.* Consider a broad array of areas within the educational environment that can be de-

- What are the best approaches to support faculty in implementing UD?
 - Are there different training and implementation needs for faculty across academic disciplines?
 - Are there different training and implementation needs across institutional contexts?
- b. Questions about the outcomes of UD
- Does UD make a difference for students with disabilities? How should this be measured?
 - Does UD benefit all students?
 - Does UD affect workflow and demands in disability services offices?
 - Does UD foster independence for students with disabilities?
 - Does UD result in more self-confidence in seeking employment opportunities for students with disabilities?
- c. Questions about the impact of UD on disability identity
- Does UD provide new and creative strategies for expanding access in higher education, thus widening the bell curve?
 - Can UD be viewed as a value or an ideal to be embraced in the same way as people value sustainable development or the Green Movement?
 - Does a UD educational environment change the nature of disability identity? And if so, how?
 - Does a focus on UD foster an institution's acceptance of the interactional model of disability?

Conclusions

Implementing UD in higher education entails an elemental idea with wide-reaching ramifications. Institutions will embrace and promote an interactional model of disability demonstrating an understanding of the ordinariness of the diversity of all learners. In order to promote this radical change, we must engage people in thinking differently about educational access, and we must challenge ourselves to think outside the compliance box.

The reflections and discussions of the UD

Think Tank are offered as suggested starting points for intentional inquiry by the field. Approaching an exploration of UD grounded in research is especially important with the long-term consumers of this research—the higher education community. We must build a strong foundation in order to sustain a commitment to achieving the change and promise of UD.

As *AHEAD* considers the work and implications of the UD Think Tank, ongoing dialogue will be valuable. Participants in the Think Tank represented diverse aspects of expertise and experience in this initial undertaking. However, they clearly articulated that as the dialogue continues, it will be extremely valuable to have broad and diverse input from the many constituents of *AHEAD* to strengthen future planning and exploration.

Author Note

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References

- Gill, C. (n.d.). *Two models of disability: A contrast*. Unpublished manuscript, Chicago Institute of Disability Research.
- The Center for Universal Design. (1997). *Principles of Universal Design version 2.0*. Raleigh, NC: North Carolina State University. Retrieved January 6, 2003, from [Http://www.design.ncsu.edu:8120/cud/univ_design/princ_overview.htm](http://www.design.ncsu.edu:8120/cud/univ_design/princ_overview.htm).
- Senge, P. (1990). *The fifth discipline: The art and practice of the learning organization*. New York: Currency Doubleday.
- Steinmetz, S. et al. (Eds.). (1998). *The Random House Webster's unabridged dictionary* (2nd ed.). New York: Random House.

Appendix A

Participant List

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Appendix B

Two Models of Disability: A Contrast

Medical Model

Disability is a deficiency or abnormality

Being disabled is negative

Disability resides in the individual

The remedy for disability-related problems is cure or normalization of the individual

The agent of remedy is the professional

Interactional Model

Disability is a difference

Being disabled, in itself, is neutral

Disability derives from the interaction between the individual and society

The remedy for disability-related problems is changes in the interaction between the individual and society

The agent of remedy can be the individual, an advocate, or anyone who affects the arrangements between the individual and society

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Appendix C

The Principles of Universal Design

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UNIVERSAL DESIGN: The design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design.

The authors collaborated to establish the following Principles of Universal Design to guide a wide range of design disciplines including environments, products, and communications. These seven principles may be applied to evaluate existing designs, guide the design process and educate both designers and consumers about the characteristics of more usable products and environments.

PRINCIPLE ONE: Equitable Use

The design is useful and marketable to people with diverse abilities.

Guidelines:

- 1a. Provide the same means of use for all users: identical whenever possible; equivalent when not.
- 1b. Avoid segregating or stigmatizing any users.
- 1c. Provisions for privacy, security, and safety should be equally available to all users.
- 1d. Make the design appealing to all users.

PRINCIPLE TWO: Flexibility in Use

The design accommodates a wide range of individual preferences and abilities.

Guidelines:

- 2a. Provide choice in methods of use.
- 2b. Accommodate right- or left-handed access and use.
- 2c. Facilitate the user's accuracy and precision.
- 2d. Provide adaptability to the user's pace.

continued

Appendix C - *continued*

PRINCIPLE THREE: Simple and Intuitive Use

Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills, or current concentration level.

Guidelines:

- 3a. Eliminate unnecessary complexity.
- 3b. Be consistent with user expectations and intuition.
- 3c. Accommodate a wide range of literacy and language skills.
- 3d. Arrange information consistent with its importance.
- 3e. Provide effective prompting and feedback during and after task completion.

PRINCIPLE FOUR: Perceptible Information

The design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities.

Guidelines:

- 4a. Use different modes (pictorial, verbal, tactile) for redundant presentation of essential information.
- 4b. Maximize "legibility" of essential information.
- 4c. Differentiate elements in ways that can be described (i.e., make it easy to give instructions or directions).
- 4d. Provide compatibility with a variety of techniques or devices used by people with sensory limitations.

PRINCIPLE FIVE: Tolerance for Error

The design minimizes hazards and the adverse consequences of accidental or unintended actions.

Guidelines:

- 5a. Arrange elements to minimize hazards and errors: most used elements, most accessible; hazardous elements eliminated, isolated, or shielded.

- 5b. Provide warnings of hazards and errors.
- 5c. Provide failsafe features.
- 5d. Discourage unconscious action in tasks that require vigilance.

PRINCIPLE SIX: Low Physical Effort

The design can be used efficiently and comfortably and with a minimum of fatigue.

Guidelines:

- 6a. Allow user to maintain a neutral body position.
- 6b. Use reasonable operating forces.
- 6c. Minimize repetitive actions.
- 6d. Minimize sustained physical effort.

PRINCIPLE SEVEN: Size and Space for Approach and Use

Appropriate size and space is provided for approach, reach, manipulation, and use regardless of user's body size, posture, or mobility.

Guidelines:

- 7a. Provide a clear line of sight to important elements for any seated or standing user.
- 7b. Make reach to all components comfortable for any seated or standing user.
- 7c. Accommodate variations in hand and grip size.
- 7d. Provide adequate space for the use of assistive devices or personal assistance.

Please note that the Principles of Universal Design address only universally usable design, while the practice of design involves more than consideration for usability. Designers must also incorporate other considerations such as economic, engineering, cultural, gender, and environmental concerns in their design processes. These Principles offer designers guidance to better integrate features that meet the needs of as many users as possible.

Compiled by advocates of Universal Design, listed in alphabetical order: Bettye Rose Connell, Mike Jones, Ron Mace, Jim Mueller, Abir Mullick, Elaine Ostroff, Jon Sanford, Ed Steinfeld, Molly Story, and Gregg Vanderheiden