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## Universal Design of Online Classes

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### **Abstract**

Universal design (UD) promotes designing with the greatest diversity of users in mind so that adaptations and accommodations are forethoughts, not afterthoughts. This concept, invented by architect Ron Mace, has been adapted to the education environment and applied to the “building” of both content and curriculum. By applying this framework, designers can create classes that are accessible to the greatest diversity of students. This paper explains universal design, gives ideas for using UD in an online class, and provides the author’s reflection on her implementation of UD.

### **Universal Design and Traditional Design**

The trend toward serving diverse students and diverse learning styles is one that has been increasing for a while. Universities and colleges are

moving toward trying to serve students from different backgrounds and with different needs in more integrated ways. Traditionally, classes were designed for a typical student, and a teacher's style was based on the teacher's preferred way of learning. The typical student was often thought to be similar to Goffman's (1963) concept of a normative person, a heterosexual Protestant white male who is able in body and mind. A typical college student would also be one that is under twenty-five years old and a full-time student. The student that is returning to school after taking a job and raising a family does not fit such a normative profile.

Traditionally, colleges and universities would design for this typical student and create add-on programs, offices, and policies for anyone who had needs outside of the standard offerings. Disability services offices, multicultural student centers, and programs for gay, lesbian, bisexual, or transgender students all were created with the acknowledgment that these students were not being adequately served by the standard university offerings (Burgstahler & Cory, 2008).

Instead of designing for the typical student, this paper promotes the use of universal design for learning (UDL). The Higher Education Opportunity Act defines universal design for learning as follows:

The term "universal design for learning" means a scientifically valid framework for guiding educational practice that:

- (a) provides flexibility in the ways information is presented, in the ways students respond or demonstrate knowledge and skills, and in the ways students are engaged; and
- (b) reduces barriers in instruction, provides appropriate accommodations, supports, and challenges, and maintains high achievement expectations for all students, including students with disabilities and students who are limited English proficient (Section 103.24).

Universal design for learning promotes designing courses and programs for students in such a way as to not need add-on "accommodations" or separate programming. The implementation of UDL creates a seamless environment for the student, where all students feel included and supported in the classroom and campus programs. UDL requires a process of imagining the greatest diversity of possible student, and designing a class or program to be accessible to all students. This renders afterthought or add-on programs and accommodations unnecessary. It is a framework for

thinking about course design, and allows the instructor or designer to take responsibility for students who do not fit the structure of the class. Instead of blaming those students, UDL asks the designer to reimagine and redesign, incorporating those students.

## Overview of Universal Design for Learning

Universal design promotes creating programs with the greatest diversity of users in mind so that adaptations and accommodations are rendered unnecessary, rather than add-on afterthoughts. This concept, invented by architect Ron Mace (Ostroff, Limont, & Hunter, n.d.), has been adapted to the education environment and applied to the building of both instruction and curriculum. The adoption of UDL as a paradigm for creating classes and curriculum has started to reach a wider audience since the Higher Education Opportunity Act of 2008 included references to UDL throughout the sections on teacher training, grant development, and, within those two sections, the use of technology.

The basic tenets of universal design for learning (UDL), as developed by CAST (formerly the Center for Applied Special Technology) are:

- Providing multiple means of representation,
- Providing multiple means of action and expression, and
- Providing multiple means of engagement (CAST, 2011, p. 5).

These tenets allow curriculum designers and instructors to use a systematic process when thinking through the accessibility and universality of their courses. By applying this framework, designers can create classes that are accessible to the greatest diversity of students.

CAST has created a detailed framework for thinking about universal design for learning. Looking at the science of how the brain learns, CAST researchers have been able to correlate the different brain processes with different ways of providing instructional activities. UDL emphasizes creating options for students both to learn (the input and the processing activities) as well as to express their learning (udlcenter.org, n.d.). It moves us away from traditional models of lecture or reading for input and writing or tests for output of knowledge. It also ensures that instructors do not skip over the essential practice and processing portion of the learning process.

The repetition of multiple means as a way of framing universal design for learning encourages redundancy and duplication, in a positive way. A designer should note that what is intuitive to them is not always intuitive to everyone. Not every student thinks in the same way; therefore, adding some redundancy to the design will help make it feel logical to students even with different ways of thinking or organizing themselves. Building in some redundancies, so that students can always find the information they are looking for with little frustration, is good design.

UDL is, ultimately, a process, not a product (Burgstahler & Cory, 2008; Chisholm & May, 2009). A designer has to imagine the greatest diversity of students possible, and design for them. Then, when someone enrolls in the class who is outside the designer's original imagination, the designer expands her imagination and incorporates that person into the design of the class. The way designers change their class activities in response to the changing student body is not as an add-on accommodation or a onetime exception for that student. Instead, they expand the class materials for all students, giving everyone the new set of options.

## Universal Design in the Online Environment

Universal design principles can be applied to the online environment as well as the in-person class. When designing a class, one could think about making it modality neutral, and creating aspects that work for students, regardless of the modality of instruction. UDL supports this in the online environment.

Technology can support UDL in many ways. When instructors provide information in accessible digital formats, then students can manipulate that material to meet their needs. For example, they can change the font, the font size, the color of the background or the color of the font. Students can also use software to have the information read aloud to them, or they can print the information and read it on paper. Accessible digital text provides multiple means of access for students (Chisholm & May, 2009). Accessible digital files are ones that are unlocked so that the reader can manipulate them; they also are marked up using headings to connote different sections, and with detailed *alt text* tags or detailed captions for all images. Many classroom-based faculty use computer software as a way to add UDL elements to their classes.

One of the best ways to make an asynchronous environment accessible is to make sure that the use of that environment is predictable (Chisholm & May, 2009). Blackboard and other learning management systems have some structures already in place that the instructor does not have the authority to modify. However, within the parts, the instructor can modify, and making the environment both predictable and redundant can make it more accessible. If the rubric for the first assignment is posted in the announcements, it is important for the instructor to make sure the rubric for the second assignment is posted in that week's announcements as well. Similarly, it is important for the instructor to post the link to the rubric in the announcement, the assignment area, and the discussion board. That way, students with different ways of thinking and different ways of organizing their course work will still find the information they need in a place that is logical to them.

## Reflection on Challenges and Things I Learn as I Implement

When I recently created a new online course using the principles of universal design for learning, I found it harder than I had imagined. Perhaps it is the knowledge of all the details of the process, and the desire to do it all, right away, but I felt overwhelmed. I wanted to design a class that was perfect, and accessible to everyone. And I set out to accomplish that.

In the spirit of UDL, I looked to create a class that had multiple means of representation, multiple means of engagement, and multiple means of expression. Our university format typically has students read an article or book, discuss on a threaded discussion board, and write papers or create presentations. I wanted to increase the options for students. I enlisted some of the technology already accessible through Blackboard, and created a class wiki as a resource for the students both to contribute to and to learn from. I also included some presentations that students could access in real time, or later via recording. This allowed students who were able to attend to gain the benefit of immediate feedback and interaction. By recording these presentations, other students could benefit from the additional modality of learning and get the interactive piece through Blackboard discussions or individual emails. I created options for assignments, when possible, for students to present orally or to write a paper. I found reading that was engaging as well as other sources of input for new ideas—videos,

blogs, popular media as well as peer-reviewed sources. Some accessible media was hard to find. There is no point in including a video if it is not also captioned. Vetting for quality and accessibility took time.

Additionally, I tried to make my online class both predictable and redundant. I created a Blackboard shell that was highly self-referential in order for students to be able to have multiple places that they can go to access the same information. The same information, such as the reading for the week, is posted in multiple places, like the course module for the week, the week's discussion board, and the class resources link.

Ultimately, I will never be able to be all things to all students. And I need to remember that UDL is a process. It is easy to follow creative ideas down one rabbit hole, only to realize that a whole category of students has been missed.

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