Universal Design for Learning in Postsecondary Institutions

James R. Stachowiak, MSE, ATP
Iowa Center for Assistive Technology Education and Research (ICATER), College of Education, University of Iowa

Most people associate the term Universal Design for Learning (UDL) with providing accessible curriculum instruction for students with disabilities in the K-12 school setting. The benefits of applying UDL principles in postsecondary settings are often overlooked and although UDL does not, it is often seen as somehow lowering standards. Conversely universally designing postsecondary classes could ultimately be more valuable to students because of the changes students experience in accommodation provision when they transition to postsecondary settings. In a K-12 setting, individualized learning for students with disabilities is addressed by the Individuals with Disabilities Education Improvement Act of 2004 (IDEA). Under this act, each student in special education is provided with an Individualized Education Plan (IEP) which outlines the accommodations needed to be successful in class. When these students graduate and move on to postsecondary institutions, this law no longer applies and students that have always been provided with accommodations are left to become self-advocates for accommodations, a role they are not used to playing. It has been found, and likely at least in part due to this, that students with disabilities are less likely to pursue a postsecondary degree than their non-disabled peers; those who do are often less likely to complete a degree, and those who complete a degree are likely to take longer than their non-disabled peers (Murray, Goldstein, Donald, Norse, & Edgar, 2000).

Postsecondary institutions do have disability services offices that work with the student to obtain the necessary accommodations, however students must
self identify to that office to obtain services. Although this service is available, not all students take advantage of it, making UDL all the more important. During the Spring 2009 semester at the University of Iowa, an accommodations needs assessment was conducted. To ensure that all students with disabilities were reached, the survey was sent to all students on campus. Within the first couple of questions, students were asked if they had a disability and could only move on if they answered “yes”. Of the 811 that responded, 100 or 12.8% indicated having some type of physical condition or learning difference that substantially affects a major life activity. Those that indicated having a disability were asked to indicate their type of disability and 75% indicated some type of “invisible” disability such as ADHD, dyslexia, or other learning disabilities. They were also subsequently asked if they were registered with the university’s Student Disability Services office for accommodations and 59% of students with disabilities indicated that they had not. The combination of not registering with student disability services and having an invisible disability often indicates that instructors will have no indication that the student has a disability and needs accommodations to succeed. There are several potential reasons that students do not self identify or utilize student disability services offices, potentially including lack of awareness of the services, embarrassment in asking for accommodations, length of the process to verify disabilities, and potential costs for necessary testing among others (Palmer & Roessler, 2000). The situation at the University of Iowa is not believed to be unique; it is assumed that similar universities have similar percentages of students with disabilities as well as percentages of students that utilize student disability services. The number of students with disabilities is often larger at community colleges as well.

The results of the UI accommodations needs assessment certainly point to a problem where one of the solutions is a greater emphasis on instructors implementing UDL principles into their classrooms. Doing so would allow all students to use their strengths as well as their preferred learning styles access, learn, and demonstrate mastery of the class material. As David Rose states, there are three main hallmarks to UDL and those are providing multiple means of representation, expression, and engagement. Providing multiple means of representation refers to providing information in multiple formats (e.g. lecture, videos, multimedia presentations, etc.). Providing multiple means of expression refers to allowing students to display knowledge in different formats (e.g. exams, papers, oral presentations, etc.). And finally,
providing multiple means of engagement refers to motivating students to learn in different ways (e.g. hands-on activities, simulations, group projects, etc.)(Rose, Harbour, Johnston, Daly, & Abarbanell, 2008).

When implementing these principles in postsecondary classrooms, there are three areas that an instructor needs to focus on: the class environment, the class presentation, and the class materials. By implementing UDL principles in each of these three areas, the instructor will be creating an environment of student centered learning that each student will be able to access and benefit from. The positives for students with disabilities will be obvious, as much of what will be discussed will ultimately limit their need for special accommodations. However, there will be benefits for all students as well. Each student brings a different learning style into the classroom. Recognizing this and providing multiple means of representation, expression, and engagement to the class will provide ample opportunity for each student to utilize his or her strengths to access and benefit from class material.

When designing classes, many instructors do not think about the difficulty that students can potentially have with the environment of the class. The discussion of the environment includes both the physical environment of the class and the environment that the instructor creates for learning. In terms of the physical environment, instructors are typically assigned a room by the institution and there is not much that can be done about the room’s location. However, prior to the class starting, it is important to think about the room itself and the type of obstacles it may provide and work to alleviate those before students enter the room. Things to think about typically include room clearances, can students get in and out of the room, and can they move around the room effectively? Also, are there obstacles to learning that can be removed? These may include obstacles that block the view of some students to the main teaching area, or machines that make loud noises that could prove to easily distract students that may struggle concentrating. To create an accessible physical environment, instructors can also ensure that the chalk or marker used for writing on a board is a color and thickness that all in the room can see. These may seem like simple changes, but often these simple things are overlooked if instructors are not implicitly thinking about them. It is helpful to use a room accessibility checklist such as the one shown in Figure 1 to make sure that everything is covered.
Figure 1. Checklist for Creating a Universally Designed Physical Classroom Environment

<table>
<thead>
<tr>
<th>✓</th>
<th>Universally Designed Physical Classroom Environment Checklist</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓</td>
<td>The entrance to the building is accessible to all students, including those who use wheelchairs, crutches, service animals, or have visual impairments.</td>
</tr>
<tr>
<td>✓</td>
<td>The entrance to the room is accessible to all students, including those who use wheelchairs, crutches, service animals, or have visual impairments.</td>
</tr>
<tr>
<td>✓</td>
<td>The paths around the room are at least 36&quot; wide and clear of obstructions.</td>
</tr>
<tr>
<td>✓</td>
<td>All students have a choice of multiple areas where they sit in class (Accessible seating is available in multiple areas, not just the front or back of class).</td>
</tr>
<tr>
<td>✓</td>
<td>The chalk/white board can be seen from every seat in the classroom (there are no visual obstructions in the room).</td>
</tr>
<tr>
<td>✓</td>
<td>Emergency procedures allowing everyone to exit the room safely exist.</td>
</tr>
<tr>
<td>✓</td>
<td>Chalk or markers used to write on the board are thick enough to be seen by all students.</td>
</tr>
<tr>
<td>✓</td>
<td>Chalk or markers used to write on the board are a color that all students can see.</td>
</tr>
<tr>
<td>✓</td>
<td>Chalk or markers used to write on the board are a color that all students can see.</td>
</tr>
<tr>
<td>✓</td>
<td>Mechanical noise that may interfere with a student hearing the teacher is limited.</td>
</tr>
<tr>
<td>✓</td>
<td>Temperature is at a comfortable setting for all students (too cold or too hot could have an effect on some student’s disabilities and in general could affect concentration).</td>
</tr>
<tr>
<td>✓</td>
<td>The room has internet access both for multimedia presentations and for students to view material on a personal computer if they can see that mode better.</td>
</tr>
<tr>
<td>✓</td>
<td>If the classroom is smaller and has movable desks, they are arranged in a circle or horseshoe to promote inclusion, discussion, and remove visual obstructions.</td>
</tr>
</tbody>
</table>

As important, if not more, than the physical environment is the learning environment that the instructor creates from the beginning of class. It should be learner centered and welcoming. The best way to establish this type of environment is through the syllabus and its introduction during the first class. A syllabus should always include university mandated language on the provision of accommodations and directions for working with the student disability services office, however, also including one’s own thoughts on accommodations could create a level of trust with students with disabilities. The syllabus should also clearly lay out the expectations for the class, provide multiple ways to contact the instructor, and provide information in both a written and graphical (e.g. calendar) form. The way that the instructor introduces the syllabus in class can have a lasting effect on the environment as well. By not only including a disability statement, but discussing it in class, the instructor is indicating the importance he or she places on working with a
student to meet his or her needs in the classroom. Another helpful exercise includes collecting an information card from each student where students are given a chance to indicate difficulties that may arise in the classroom such as difficulty with written text, difficulty note taking, or scheduling conflicts with religious holidays, etc. This gives instructors an opportunity to proactively build the curriculum with these issues in mind as opposed to having to retrofit the course later to accommodate needs, which is always a more time consuming process.

Once UDL is applied to the class environment, the next step is to apply it to the instructional presentation as well. When doing so, it is important to keep learning styles as well as potential accommodation needs of students in mind. In terms of providing information, it is easiest to reach all students by varying the method of presentation and not solely lecturing. If possible, include videos, group work, role playing situations, and class discussion. Also, to eliminate the need for some accommodations, consider providing copies of the class notes, PowerPoint slides, and/or outlines. This can reduce the need for students to acquire note taking accommodations in your class, while providing the benefit of these accommodations to each student. Providing these types of notes enables all students to focus more on the class and class participation as opposed to the mechanical task of note taking. It also helps students to better understand key points by potentially providing a different perspective on what is and is not important.

Applying UDL principles to class materials is often the most helpful area for students with disabilities. The advancement of computer technology has led to many class materials being created and distributed in a digital format, which makes them easy to manipulate into a desired form by the student. Having digital text is often the first step taken to implement UDL in a class. Digital text is a UDL consideration because it can easily be turned into Braille or enlarged in size for students with visual impairments. For students with physical disabilities that cannot turn book pages, people with learning disabilities, English language learners, or simply people that consider themselves auditory learners, digital text combined with some type of text reader can read text aloud. By providing class materials such as text books, class notes, extra readings, etc. in a digital format, the instructor is allowing his or her students to access that text in whatever format best works for them, a true example of UDL. Simply making text available in an electronic
format does not guarantee accessibility however. When a PDF is inaccessible, the text is often recognized as an image as shown in Figure 2. Figure 3 displays what an accessible PDF looks like when the reading order is checked. Each chunk of text is identified as text and images are given proper alternative text descriptions. Instructors need to be aware of and follow the steps to creating accessible PDF and Word documents before posting them to a class website or their efforts to implement UDL are for naught. Tips on creating accessible electronic documents can be found on the Universal Access project website www.education.uiowa.edu/universalaccess.

Figure 2. Tags Indicating that PDF Text is Recognized as an Image and thus Inaccessible

![Image of inaccessible PDF]

Figure 3. Tags Indicating that PDF Text is Recognized and Accessible

![Image of accessible PDF]
Technology can also play a role in implementing UDL in a class, and there are several simple technologies that instructors can use to do this. One that is being trialed at the University of Iowa involves using a Livescribe Smart Pen (www.livescribe.com) to take and provide class notes in multiple formats. The Smart Pen is a pen that contains a recording device, which when used with its accompanying notebook, links written notes to what was recorded at the time the note was written. When reviewing notes, the user simply taps a written note with the pen and listens to the attached recording. As an added piece to this, both audio and written notes can be transferred to the computer where they can be shared and interacted with. Figure 4 shows an example of what Smart Pen notes look like when transferred to the computer. At the University of Iowa, several instructors are implementing the use of this technology to supply class notes in multiple formats to all students. Instructors assign a different student to take notes each class period. At the end of the class period, they collect the pen, extract the notes, and share them via the class website. With these notes on the website every student not only has access to written class notes, but they have the option to access them in an audio format as well, if that best suits their individual need. Feedback on providing notes in this manner has been positive and in classes where this has been implemented accommodation requests for notes and note takers has
diminished. The Smart Pen is only one example of a type of technology that could be used to help implement UDL principles in the classroom. Providing access to several other tools that are often considered assistive technologies such as free text readers can help with UDL implementation as well.

Figure 4. Class Notes from the Pulse Smart Pen Shared on the Computer

In conclusion, universally designed classes are as necessary, if not more, in postsecondary settings as they are in K-12 settings due to student need for self advocating. Instructors can implement the main ideas of UDL, providing multiple means of expression, representation, and engagement in three areas of their classes: the class environment, class presentation, and class materials. Doing this benefits all students in class; students with disabilities receive the accommodations that they need and other students benefit from them as well. Also, universally designing the class often takes less work than retrofitting and attempting to provide several different types of accommodations once the class has already begun. A key example of this is in providing accessible electronic material. Designing Microsoft Word and PDF
documents to be accessible in an electronic format takes up much less time than attempting to convert an inaccessible electronic document. Technology can also be a helpful way to implement UDL principles and there are several easy to use technologies such as the Smart Pen that are currently being used for this purpose in postsecondary classrooms. The Universal Access Project in the College of Education at the University of Iowa has been working on information, trainings, materials, and how-to videos to help postsecondary instructors better implement UDL principles in their classes. These materials can be found on the project website: www.education.uiowa.edu/universalaccess.

References


©May 2010 The Johns Hopkins University New Horizons for Learning

http://education.jhu.edu

For permission to redistribute, please go to: Johns Hopkins University New Horizons for Learning Copyright and Permission Information