Universal Design for Learning

3rd edition

A Supplementary Unit
Preparing Faculty & Teaching Assistants
to Accommodate Students with Disabilities

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ASD Project
Accommodating Students with Disabilities
in Higher Education

Department of Special Education and Rehabilitation

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about this unit
This unit on Universal Design for Learning (UDL) is a supplement to a larger training program for faculty and teaching assistants about working with students with disabilities. While it is designed to be a stand-alone unit, the reader may also want to consider examining additional information in the ASD Participant Handbook. If you would like a copy, contact your Disability Service Office (DSO).

unit overview
We begin this unit by discussing the concept of UDL and how it improves accessibility for all students rather than just providing individual accommodations for students with disabilities.

This unit provides information on the fundamental practices of UDL and includes tips and strategies on how to implement these practices in courses:

• create a climate of openness and respect
• consider the physical environment
• clearly define expectations and offer feedback
• promote information access
• use cooperative learning methods
• assess students’ knowledge through a variety of methods

A list of print and online resources can be found on page 27 of the “Resources” section.

universities and colleges vary . . .
Universities and colleges vary considerably in the way they provide accommodations and in the specific responsibilities of the student, the instructor, and the Disability Service Office. Universal Design for Learning is intended to benefit all students and, in some cases, may obviate the need for individual accommodations.
introduction
**the parable of the can opener**

*We have this old can opener in our house.* It was my parents’ originally. It probably has been around for forty years and, for most of that time, it was the standard. In fact, you can still buy the same device in supermarkets today. You know the type; it has two metal arms which you squeeze together with one hand to cut through the top of a can. As you continue to squeeze the two handles together, you turn the flat metal handle with your other hand and, as the can rotates, it cuts the top free. The task of getting the can open can be quite a chore; some might say it’s a real knuckle-breaker.

I remember my mom struggling with that old can opener every time she used it. When she got a little older and slightly arthritic, she asked my brother or me to open the cans. She just wasn’t up to struggling with it anymore.

One day we got an electric can opener. I’m not sure who was happier, my mom or me and my brother. Mom still let us open the cans because we liked to play with the new can opener. But for her, the point was she didn’t have to ask us; she could do it herself. Even as a youngster I could tell how much that meant to her. I guess that’s why I still keep that old can opener. It’s a reminder of times past, and also it keeps me thinking about whether there might be a better way.

*Perhaps there is a way that would allow everyone to have an easier time with some chore or that would let people like my mom, who have some disability or impairment, live their lives with greater self-sufficiency and satisfaction. That’s what universal design is about.*

*Photo capture from the ASD Computer-Based Training Program, UDL Section.

“*…it keeps me thinking about whether there might be a better way.*”
the concept of universal design

The concept of universal design originated in architectural planning. A heightened awareness of the need for physical access for individuals with sensory and motor impairments led to building designs that incorporated assistive technologies and adaptations, or eliminated the need for them.

For the first time, consideration was placed on designing physical spaces to be accessible rather than adapting existing architecture to meet the needs of individuals with disabilities at a later time. Airports began designing restrooms with large, door-free entrances. That simple change in design made restrooms more accessible for people in wheelchairs and far easier for travelers pushing strollers or carrying luggage.

Years later, researchers in education began to advocate for adapting the architectural concept of universal design and its principles to education. It has since become a primary teaching strategy to support an increasingly diverse student body, including students with disabilities. For information on these principles, refer to the print and online resources listed on page 27.

Universal Design for Learning (UDL) refers to the process of making course concepts and skills attainable regardless of differing learning styles, physical, sensory, organizational, and linguistic abilities.

Universal Design for Learning (UDL) is often described with a set of principles to guide their use. These include:

1) be accessible and fair;
2) provide flexibility in use, participation, and presentation;
3) be straightforward and consistent;
4) present information explicitly to be readily perceived;
5) provide a supportive learning environment;
6) minimize unnecessary physical effort or requirements; and
7) ensure a learning space that accommodates both students and instructional methods.
universal design for learning (UDL)
A faculty member can incorporate many elements into his/her teaching practices from the outset that can make a course more accessible to a wide array of students. This process, called Universal Design for Learning (UDL), emphasizes adjusting teaching practices and information presentation to meet varying educational needs and learning styles.

★ Rather than taking the “one-size-fits-all” approach, UDL stresses flexible and customizable delivery of content, assignments, and activities.

★ To the extent that it is possible, UDL is a preferred first line of attack to accommodate diverse learners. It allows the learning process to be more accessible without labeling or serving students differently.

★ Universal Design for Learning enhances access to instruction for all students.

★ Universal Design for Learning should not water down academic standards. Doing so would undermine its purpose. Skills essential to the purpose of the course must be preserved so that students will be competent.

Note: It is important to understand that no product or instructional method will ever be 100% universal given the wide range in students’ individual needs. When individualized accommodations for students with disabilities are required, the Rehabilitation Act of 1973 and the Americans with Disabilities Act apply (see side bar).

In summary, universal design for learning:
Allows all students to more easily learn course concepts and information by:

• delivering course information in a customizable format
• removing barriers to information access
• providing flexibility without watering down the curriculum

Section 504 of the Rehabilitation Act and the Americans with Disabilities Act of 1973 (ADA) may require accommodations to be made.

Section 504 of the Rehabilitation Act of 1973:
Requires that institutions of higher education provide students with disabilities the same opportunities as non-disabled students.

Americans with Disabilities Act (ADA):
Civil rights legislation prohibiting discrimination against individuals with disabilities in:
• employment
• state and local government
• public accommodations and services
• transportation
• telecommunications
fundamental practices

These fundamental practices enable faculty to adjust their teaching methods without compromising the academic integrity of their courses.

★ Create a climate of openness and respect
★ Consider the physical environment
★ Clearly define expectations and offer feedback
★ Promote information access
★ Use cooperative learning methods
★ Assess students’ knowledge through a variety of methods

The following pages give tips and strategies about these practices.
create a climate of openness and respect

Some students may be intimidated by faculty. Therefore, it is essential to create a climate of openness and respect. This lets students know you are approachable and interested in their success.

**tips**

- Encourage students to visit with you during your office hours throughout the term.

- Identify campus support services so students know where to go for help (e.g. counseling, the disability service office, academic support, tutoring, etc.).
consider the physical environment

The instructor does not always have control over the physical environment of his/her classroom. However, it is good to be aware of conditions that may interfere with learning and improve them if possible.

**tips**

- Encourage students to choose their seats in the room based on lighting, line of sight, and how well they can hear the lecture.

- Be aware of ambient noise and other auditory interference. Take advantage of amplification systems and captioning.

- Regularly ask students if they can hear you and if they can see the presentation.

- If distracting conditions can’t be remedied, request a different room.
When an instructor clearly defines course expectations, it gives students a clear sense of direction. Frequent and timely feedback to students allows them to assess their progress and make adjustments to their study strategies.

**tips**

- Create a detailed syllabus that describes course requirements and due dates for assignments.
- Provide specific criteria and examples for course projects and assignments whenever possible.
- Consider the alignment between what you teach and what you test.
- Evaluate students’ knowledge throughout the course.
- Build flexibility into your attendance and testing policies to maintain expectations but allow for unforeseen situations. For example, some instructors allow students to drop one quiz score.
multiple formats
Students access information in a variety of formats, including audio, visual and kinesthetic. Multiple formats increase the effectiveness of instruction.

tips
audio
• Avoid pronouns such as “this” and “that” when giving instructions or directions.
• Allow students to record lectures or make copies of the lectures available in the library or online.
• Repeat questions asked in class so students hear the question clearly before you respond.
• Read overheads/slides out loud so that students can get the information both visually and auditorily.

visual
• Use a large font size (18 point or larger) for projected presentations so they can be seen more easily. Also, use contrasting colors and simple designs. While black and white print provides contrast, some colors (such as yellow) are better background colors and reduce glare.
• Leave overheads/slides up long enough for students to take notes.
• Use captioned videos whenever possible. Captions help many students, including students who speak English as a second language, students with hearing impairments, students at the back of the room, and all students when the acoustics and/or audio quality are poor.

kinesthetic
• Use a variety of teaching strategies in addition to lecture, such as models, animations, raised-line drawings, field trips, discussion groups, etc.
technology

Computer and other technologies increase information access for many students. Providing digital format also enables students to use assistive devices to access the information.

**tips**

- Provide digital copies of overheads, lecture outlines, and PowerPoint slides. Many people read more easily if they can enlarge the text, change the font, etc.

- Convert PDFs to text files if necessary.

- Post course materials on the Web as early as possible. This allows students more time to prepare for class.

- Some students must access information through assistive technology such as screen readers or enlarged fonts. When providing information in digital format, be aware that graphic representations such as pictures, graphs, charts, and tables may not be accessible with screen readers or Braille displays. When a graphic is central to a concept, provide a written description.

- Be aware that chat rooms are not accessible via screen readers.

- Contact your DSO for assistance.

**Digital vs hard copy**

Digital material can maximize the use of assistive technology. However, we do not suggest the exclusive use of digital format as both digital and print formats serve important purposes (see page 20).
textbook selection
Whenever possible, choose textbooks and other materials that are available in both print and digital format. If a digital version is available, students can transfer textbook information to an alternate format. With digital format, students can search for key phrases and use other advanced features.

tips

• Sometimes a digital version of a textbook is needed for a student who has a disability. If textbooks are adopted early, it makes it easier for your DSO to produce it.

• Consider using textbooks and materials that are available with online practice tests, supplements, and learning supports.
organization and planning

Providing course organizers, summaries, and study groups helps students prepare for upcoming events. Students rely on advance information to manage time, meet deadlines, or arrange for specific accommodations such as Braille, audio, or large print. Facilitating study groups can also help many students.

tips

• A preview of course activities and timelines can be part of the syllabus, provided on a separate hand-out, or posted on a web page.

• Daily class agendas with reminders of assignments can be made available to students.

• Encourage students to organize study groups; involve the TA when necessary.

Digital vs print

We suggest that both digital and print formats be made available to students.

Advantages of digital format:
• facilitates the use of assistive technology

Advantages of print format:
• facilitates better note-taking
• connects the overheads/slides to the lecture
• allows students to draw diagrams and use other mapping techniques
• Makes it possible for low vision students to see information in projected materials
facilitating note-taking
Note-taking is vital in academic coursework. However, note-taking can be problematic for many students: students who speak English as a second language, students with limited manual dexterity, the elderly, etc.

tips
• Give students lecture outlines to facilitate organization and enable clear note-taking.
• Speak slowly enough to allow students to take notes.
• Use contrasting colors for presentation materials, including white boards, slides, etc. Dark colors such as black and dark blue are more visible than light colors.
Cooperative learning offers students opportunities to master concepts through discussion, application, and exposure to different perspectives. By using small groups, faculty can build natural supports for learning.

**tips**

- Consider ways to include students with disabilities. Cooperative learning allows some students who would otherwise be excluded to participate in labs or field work experiences.

- Give cooperative learning groups written as well as verbal instructions.

- Establish rules for speaking in the group. Members should speak one at a time and identify themselves.

- If a student is having difficulty, ask the student privately for suggestions on how he/she can be more involved.

**Cooperative Learning Basic Elements**

What makes cooperative learning work?

- Positive interdependence—each member is indispensable, with unique skills and contributions, resulting in group commitment.

- Face-to-face interaction—by promoting each other’s learning, group members become personally committed to each other and their mutual goals.

- Individual and group accountability—the group must achieve its goals and the individual must contribute his/her share.

- Interpersonal and small group skills—simultaneous taskwork and teamwork result in improved social skills.

- Group processing—ongoing discussion to improve working relationships enhances the effectiveness of group learning.
To the extent possible, it is helpful to use a variety of strategies to assess students' knowledge such as projects, oral presentations, multiple-choice exams, quizzes, research papers, etc. The possibilities of doing this depend on considerations of academic integrity, rigor, purpose, practicality, class size, etc.

With this in mind, here are a few examples that professors have shared:

- In an English class, a professor gave students an option of either writing a traditional research paper or writing a fictional story that applied principles taught in the class.

- A history professor offered students the choice of doing an oral presentation with a defense or taking a written exam.

- In a science class, the professor allowed students to choose between two or three experiments to conduct.
resources
online and print information
The following list of online resources describes websites but does not include website addresses since they often change. You may also access a desired website by typing the name of the resource into your search engine.

online information

Universal Design:

Center for Applied Special Technology—CAST
The CAST Website uses Universal Design for Learning as a blueprint to combine research and technology with effective teaching strategies. It contains information on the development of innovative, technology-based educational resources and strategies.

FacultyWare—University of Connecticut
FacultyWare is an online resource for faculty on Universal Design for Instruction. This website displays examples of inclusive practices, instructional techniques, or “products,” used by faculty to incorporate these principles. Faculty can view instructional products submitted by other faculty members or submit one of their own.

Universal Instructional Design Project—UID
This University of Guelph website provides valuable knowledge for faculty and graduate teaching assistants in higher education. The site includes links to information on universal design principles, the application of these principles and other suggestions that can benefit students.

General Information for Faculty:

DO-IT Prof—University of Washington
The DO-IT Prof program has compiled a resource page called “The Faculty Room” for faculty and administrators in postsecondary institutions. It is designed as a ready resource for quick or comprehensive information on topics such as accommodation strategies, universal design principles, rights and responsibilities of students with disabilities and faculty, etc.
Fast Facts for Faculty Publications
This Ohio State University site is designed to increase faculty knowledge and awareness. The “Fast Facts for Faculty” are consolidated information sheets for faculty and administrators on the accommodation process, rights and responsibilities, technology’s role in effective teaching, designing of accessible syllabi, and universal design for learning concepts.

Class Act, Access for Deaf and Hard-of-Hearing Students
This website, called Class Act, originates at the Rochester Institute of Technology. It is intended to improve existing teaching practice regarding “access” to learning for deaf and hard-of-hearing students in postsecondary classrooms.

Creating Accessible Websites:

Georgia Tech Research on Accessible Distance Education—GRADE
GRADE provides research, training, technical assistance, and information on improving the accessibility of distance education for students with disabilities at universities and colleges throughout the nation. A free, ten-module online tutorial about making distance learning accessible for students with disabilities is available.

print information

