Resources:
Teaching Students with Disabilities

Created by:
The Organization of Students with Disabilities
University of Chicago
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Introduction

The purpose of this guide is to provide some basic information and resources about teaching students with disabilities. Our hope is that it will serve as a tool to enable faculty and instructors at the University of Chicago to make their courses more accessible to students, acknowledging that the life of the mind is always embodied. Besides equipping faculty with better understandings of some of the variables involved in facilitating inclusive classrooms, this guide is part of an effort to support students with disabilities who have come to the University of Chicago to pursue undergraduate and graduate educations. We understand disability to include physical disabilities, sensory disabilities, learning disabilities, psychiatric disabilities, chronic illness or medical disabilities, brain injury, speech and language disabilities, neuro-atypicality, etc.; disabilities can be temporary, and they can be non-visible. We hope that this guide constitutes a practical contribution to the University's commitment to "let knowledge grow from more to more; and so be human life enriched."

We have organized "Teaching Students with Disabilities" into sections on a variety of topics so that you can refer to individual sections as needed. The guide covers suggestions for best practices that you can implement in your courses, some approaches to thinking about disability and accessibility, an overview of the University of Chicago's disability policy and the process for requesting official accommodations, and some basics on FERPA privacy law and what you need to know about your legal responsibilities before having a conversation with a student. The appendices contain more technical information that might be useful in a particular situation, as in the overview of the different kinds of assistive technology your students or colleagues might be using and what you can do to make your courses more accessible for them.

We recommend beginning with the "quick-start" section on "The Easiest and Most Important Things You Can Do to Make All Your Classes More Accessible," which gives some suggestions that we hope all instructors at the University of Chicago will implement in their courses to make them more welcoming and enabling for people with disabilities.

Table of Contents

The Easiest and Most Important Things You Can Do to Make All of Your Classes More Accessible

- **Include a disability statement on every syllabus** encouraging students to come to you if there is anything that would make the class more fully accessible to them or if they need any official accommodations. (For examples, see "Syllabus Statements")

- **Familiarize yourself with the university's disability policy, the process for requesting official accommodations through Student Disability Services, and the basics of FERPA privacy law** so that you will be ready when a student comes to you with a request for accommodations. (All of this information is available in "Student Disability Services" and "Respecting Student Privacy")

- **Take a moment to say something about your syllabus disability statement on the first day of class.** Draw your students' attention to it and invite students to talk with you about any accessibility issues that arise throughout the course. Consider also checking in with the class a couple of times during the quarter to invite feedback regarding how accessibility is going for them: access needs can fluctuate, younger students or students with acquired disabilities may still be figuring out what they need to request, and finding the right accessibility practices in a course is often an ongoing process.

- In your syllabus and via class announcements, make sure to **describe what a typical class session will look like**, including the kinds of in-class activities and out-of-class assignments that will be used. Also **make note of any special sessions** on the syllabus when there will be a change in activities or location, such as a film screening or field trip. This will give the students an opportunity to think through the kinds of accommodations they might need to be able to fully participate in all aspects of the course, allowing for you and the student to work out a plan ahead of time.

Orienting Your Thinking About Disability in the Classroom

Universal Design vs. Retro-fitting (building in vs. bolting on)

Universal design is best understood as a way of thinking or a mode of approach that is invested in building spaces and environments (including pedagogical ones) that will work well for as many people as possible. Retro-fitting is common architecturally, where the cost of rebuilding is often not practical: a space or environment that only accounts for the most common or normative embodiments is supplemented by a structure that makes the environment functional, but often in a "clunky" or inconvenient way. (For example, accessible entrances that are often extremely out of the way, or only grant access to one room; here accessibility is "bolted on" rather than "built in." Image descriptions: The top image shows Ratner Athletic Center's front entrance, where three steps lead to the doors. The plaza slopes up toward the left so that, at the far left, the bottom level is continuous with the top level of the steps. This is an example of built in accessibility. The bottom image shows a blue sign on a wrought iron fence near Crerar Library, which has a universal disability symbol and text that reads: "Accessible entrance to Kersten Physics Teaching Center Room 106 only." This is a retro-fit, access that is "bolted on.")
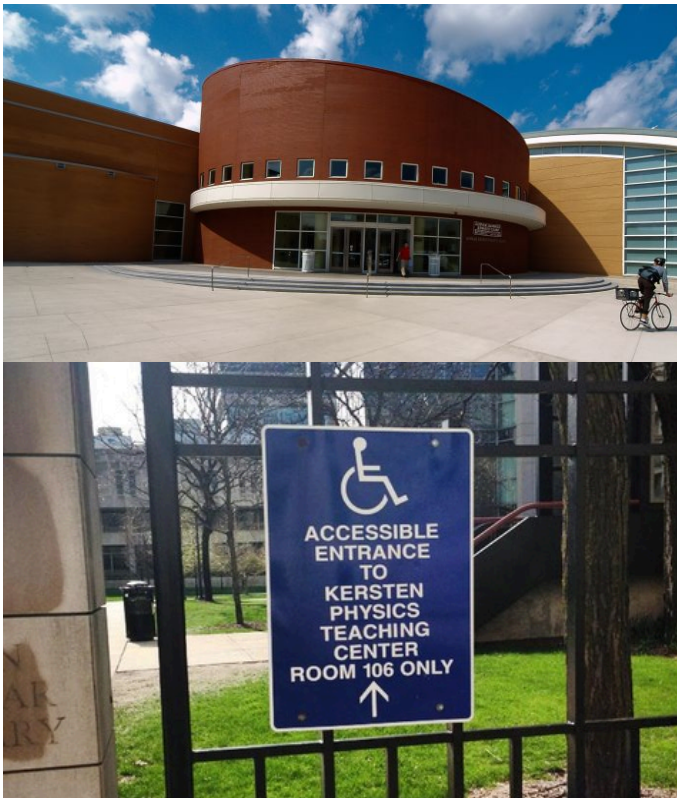
Universal design's modus operandi involves:

•   Thinking inclusively about a range of disabilities and life experiences (print disabilities, physical disabilities, learning disabilities, psychiatric disabilities, sensory disabilities, past trauma)
•   Recognizing practices or material conditions that could form barriers for some people
•   Seeking/Inviting feedback from students and adapting practices

Adjustments of some sort are always going to happen as you adapt your teaching practice to bodies and minds you haven't anticipated. But there is a difference: a retro-fitting approach starts from the "smooth functioning" of normal classroom procedure and posits disability as a surprise, a problem, or an interruption.

Universal design, on the other hand, is a way of operating that has already anticipated disability and can restrategize to include any unanticipated specifics. This relatively simple shift can have enormous ramifications for the students you'll be working with, since it helps allay the psychological stress of being a "burden" or a problem, feeling like one can't ask for what one needs, or being afraid that one will be (pre)judged, given preferential treatment, or downgraded.

Things you might not have considered about disability in your classroom

Students may have a range of awareness and knowledge about their disabilities.

A student may not yet have a lot of experience with their disability. The disability may be temporary (due to an injury or a temporary medical condition, for example), or it may be a disability that the student has only recently acquired. This means the student may not know about Student Disability Services, the accommodations process, or assistive technology available. They may be trying out assistive technology or different ways of doing things and may not have figured out yet what works the best for them. They may not even think of themselves as having a disability and they may be resistant to being identified this way. Other students may have a very good idea of what they need from you to make the class accessible to them and facilitate their learning. This means that you should not always expect a student to be an expert on their own disability and allow for the fact that they may be experimenting (versus questioning whether they "really" have a disability or getting frustrated that the student does not know how to "fix" "the problem").

A student's disability may not manifest in the same way all the time, and not all disabilities with the same "label" manifest in the same way.

The experience of a disability can often vary from day to day or week to week. A student with multiple sclerosis, for example, may be able to write and type with ease at some times but only with great difficulty at others. Students should never feel that they have to explain the experience of their disability or justify their choice to use or not use an approved accommodation at a particular time.

A student's experience with their disability may also vary according to the class material. In university level courses, we often ask students to learn new skills or attempt new tasks they have never tried before. A student who has never taken a data analysis class may not know how to make course materials accessible to them if they have never seen data presented in that way. Similarly, a student who has never taken a foreign language course may not know which in-class activities might difficult for them if they do not know what a typical class session is likely to entail. Students won't always be able to predict all of the accommodations they will need in a course, and figuring out what works best in a course may be a learning process for both you and the student. So plan to be flexible.

In your class, you will not always know who has a disability and who does not.

A student's disability may or may not be visible to you or other students and they may not choose to disclose a disability. Before you begin the class, assume that you will have different learners so you can create policies (including technology and accommodation policies) that will work for all students. To make sure that you are creating an accessible environment for all learners, whenever possible use best practices regardless of who is in your class (see "Best Practices"). You will always increase student learning when you engage different modalities,

give options, and make the materials as clear and accessible as possible. By creating an accessible classroom, you will create sustainable policies and build student trust.

Students have different comfort levels disclosing their disability.

You can help decrease stigma around disabilities by being open and comfortable talking to students when they want to discuss a learning or access need. But it is also important to respect the privacy of each student and not pressure them to disclose more than they feel comfortable with. This will vary from student to student. Students may feel comfortable disclosing to you and not the class, for instance. Ask them who they feel comfortable talking to. Students may also provide an Accommodation Determination Letter so that you can see their accommodations, but they may not want to discuss the type of disability they have. If the student provides an Accommodation Determination Letter, they do not need to provide any other official documentation or disclose any further information about their disability or the specific reasons why they need these accommodations. You can trust that all of the proper documentation has been vetted by Student Disability Services.

Student Disability Services (SDS) and the Accommodation Process

If a student with a disability comes to you and requests an accommodation, your first step should be to encourage them to register with **Student Disability Services** if they haven't already. The University of Chicago's policy is that all accommodation requests should be processed through Student Disability Services. This ensures that accommodations will be standardized across the university so that a student will receive the same accommodations in all of their classes and individual instructors are not responsible for making judgments about what kinds of accommodations are reasonable or appropriate. It also protects students' access to accommodations, since the University has a legal obligation to implement the accommodations noted in the letter.

When a student first registers with SDS, they are asked to provide documentation of disability (which varies depending on the disability and may include going through a testing process or providing documentation from a specialist or qualified medical professional). SDS then evaluates this information, talks with the student, and comes to a determination as to what accommodations are appropriate. Once a decision has been reached, SDS issues the student an **Accommodation Determination Letter (ADL)** that outlines the accommodations SDS has approved for this student. The student should then present this letter to instructors[1] to inform them of their approved accommodations. Encourage your students to give you the letter sooner rather than later, but be aware that legally, students may choose to present their letters later in the quarter, or on an as-needed basis. It is illegal to deny accommodations because a student did not present an Accommodation Determination Letter at the beginning of the term. According to university policy, instructors should always honor the Accommodation Determination Letter and do what they can to facilitate the accommodations process.

A few things to know:

Accommodations versus Disability Status
Accommodations Letters list approved accommodations, not diagnoses or disability status. It is up to the students whether they would like to also disclose the disability/disabilities that they are receiving accommodations for; if students do not disclose their disability, you should still implement the accommodations outlined in the letter, no-questions-asked (See also "Respecting Student's Privacy").

Time to Process
The accommodations determination process can take time, depending on the whether the student already has the necessary documentation or needs to wait to see a specialist or to go through additional testing. For learning disabilities, for example, students typically need to be tested by a university approved testing facility, which can also be expensive in certain cases.

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[1] This procedure applies to all undergraduates. The protocols for graduate students vary by division and professional school, and it may be the case that letters are given only to the Dean of Students. For specific information about graduate student Accommodation Determination Letters, please contact SDS.

In most cases, SDS is able to issue accommodation letters within one to two weeks, but the process can take up to ten weeks. Often SDS will give preliminary approval for temporary accommodations right away, especially if the student has received similar accommodations before in high school or at another institution.

Student Discretion
It is also important to note that it is up to the student when or if they would like to make use of their approved accommodations. Again, students should never feel that they have to explain the experience of their disability or justify their choice to use or not use an approved accommodation at a particular time.

A few examples of accommodations that might show up on an Accommodation Determination Letter:

Extra time on exams
Use of a computer or assistive technology for exams
The option to take exams in an alternative location
An alternative format (Braille, electronic format) for exams, assignments, or class readings
The use of a notetaker in class
The opportunity to obtain a copy of professor's lecture notes, handouts, and PowerPoint presentations (preferably before class)
The opportunity to record lectures or class sessions
Assistance from a TA, classmate, or personal assistant for in-class assignments
The student may need to miss class, come to class late, or take breaks in class due to their disability
Modification of class participation
Permission to stand or move around during class
Permission to bring food or drink to class

Contact information for Student Disability Services:
Gregory A. Moorehead, Ed.D., gmoorehead@uchicago.edu
Director
Coordinates accommodations for all graduate/professional school students

Karyn LaTurner, karyn@uchicago.edu
Associate Director
Coordinates accommodations for all students in the College

Student Disability Services
5501 S. Ellis Avenue
Chicago, IL 60637
Office Hours: 8:30a.m.-5p.m. Monday through Friday
Phone: (773) 702-6000
TTY: 773-795-1186
Fax: 773-926-0996
Website: http://disabilities.uchicago.edu/

Respecting Student Privacy: FERPA 101

As a teacher and classroom leader/moderator, it's your responsibility to provide adequate access to instruction and classroom activities, but it's also your responsibility to respect student privacy. In terms of disability disclosure, this can become tricky, especially if you're unfamiliar with the legal parameters outlined by FERPA (Family Educational Rights and Privacy Act).

Ultimately, under FERPA, it's not legal to force, pressure, or ask a student to disclose a disability. And students who choose not to disclose may very well be operating wisely, especially given some of the dramatic responses and discrimination that disclosing certain disabilities may provoke. Above all, students' rights to accommodations should not be contingent on their willingness to disclose a disability. A student can be very well-served through a discussion of accommodations that leaves disability status out of the equation-- you don't need the label to be responsive to the student's requests and engaged in working out a set of classroom practices that will maximize access for them.

At the same time, we're operating under the assumption that negative or dramatic responses and discrimination of any kind are unjust, and we do not want to contribute to or reinforce stigma by suggesting to students that they should not talk about their disabilities, or even that certain disabilities are "delicate matters."

The ideal situation is to create an inviting, understanding, and pragmatic atmosphere around disability and accommodations so that students feel like disclosure will be well-received, respected, and instrumental. Ideally, too, the student should be able to trust that they will have a measure of control over that information, once disclosed. If a student discloses a disability to you, or elects to use an accommodation, it's a good idea to ask them if they'd prefer to keep the information or the accommodation between the two of you, and talk about whether and how any information or accommodations will be disclosed to the class as a whole (will an accommodation be explained or just implemented? who will speak, what will be said, how will they articulate it?). Until you've gauged your students' disclosure preferences, have discussions about accommodations privately or over email.

And don't forget that your attitude has a lot of power in these situations-- if you are open, respectful, and treat disability and accommodations as to-be-expected and as a right (as opposed to an embarrassing secret or an inconvenience), this goes a long way in and of itself. Be encouraging and inviting, but leave it up to a student to actually disclose.

Syllabus Statements

You can build student trust, communication, and learning at the beginning of the course by writing a comprehensive and thoughtful syllabus statement regarding accommodations policies. Having a statement in your syllabus is a great first step that becomes even more effective for shaping an inclusive classroom atmosphere when you make a point of mentioning it during your first class meeting. *Having a syllabus statement and pointing it out in class establishes disability and accommodations as anticipated, imaginable, workable situations.*

Some pitfalls to avoid as you compose your statements:

- language that casts doubt on accommodations and disability status (e.g. "students with disabilities who *believe* they may need…"). *Nota bene:* you may want to include a separate statement that acknowledges that students may be unsure about whether accommodations are something they need (consider: "If you are unsure about whether you need accommodations, please feel free to talk to me or Student Disability Services").

- a language of assistance. We recommend avoiding this language because it suggests that access is a "gift" or a charity when it is in fact a right. (Consider the difference between "if you need assistance" and "if you need accommodations," where accommodations are understood as legally-guaranteed practices/measures that enable students' success. Accommodations refers to a set-up, while assistance refers to an interpersonal relationship between a helper and a beneficiary.)

- requiring disclosure at a certain point in the quarter, with language that implies a "deadline" after which access requests won't be considered (encouraging advance notice is highly recommended, but students do not HAVE to disclose in Week 1 to receive accommodations)

Here are a few options and examples to get you started:

<u>This is a classroom committed to access:</u> if there are any changes we could implement that would facilitate your greater participation, don't hesitate to contact me so that we can make arrangements. As I'll mention in any access meetings, if it's appropriate, I encourage you to register with Student Disability Services so that you can take advantage of the resources that they can offer (see: disabilities.uchicago.edu).
As you've likely noticed, we will be using real-time captioning during our class sections. In order to facilitate captioning, please try to be aware of your speaking volume, clarity, and speed. (From Margaret Fink's *Retailing Bodies: Anomalous Embodiment in American Reality TV* course)

<u>Disabilities Accommodation</u>
I am committed to making this an enabling and accessible classroom environment for everyone. If you have any kind of disability, please come talk to me immediately. I am more than happy to provide any kind of accommodation that will help you succeed in this class. I also strongly encourage you to contact Student Disability Services if you haven't already. They will guide you through the process of requesting official accommodations in all of your classes.

See disabilities.uchicago.edu for more information on the University of Chicago's disability and accommodation policies and Student Disability Services.
(From Hannah Mosher's *Classics of Social and Political Thought* course*)*

From the SDS faculty handbook
If you require any accommodations for this course, as soon as possible please provide your instructor with a copy of your Accommodation Determination Letter (provided to you by the Student Disability Services office) so that you may discuss with him/her how your accommodations may be implemented in this course.
The University of Chicago is committed to ensuring the full participation of all students in its programs. If you have a documented disability (or think you may have a disability) and, as a result, need a reasonable accommodation to participate in class, complete course requirements, or benefit from the University's programs or services, you are encouraged to contact Student Disability Services as soon as possible. To receive reasonable accommodation, you must be appropriately registered with Student Disability Services.
Please contact the office at (773) 702-6000/TTY 773-795-1186
or gmoorehead@uchicago.edu, or visit the website at disabilities.uchicago.edu.
Student Disability Services is located at 5501 S. Ellis Avenue.

Best Practices for Inclusive Teaching

Syllabus

- Include some sort of **Accessibility Statement** in your class syllabus (See "Syllabus Statements").
- As much as possible, outline the kinds of activities you'll be doing ("how class will usually go"), so that students can alert you to any adaptations that they'll need. Highlight any special classes that vary from the regular format (including trips, presentations, classes held outside, etc.) so students can plan their accommodations ahead of time.
- Include caveats to your tech policy that exceptions will be made for accessibility purposes, especially if you have a "no laptop" policy.
- Consider building a policy about what to do if triggered in the Accessibility Statement. We recommend having a "what to do" policy as opposed to warning students about potentially triggering texts, just because triggers are so unpredictable (or do both). (Example: "If something that comes up in class causes you mental distress, please do whatever you need to do to be comfortable—feel free to take a break and come back, or to leave class totally. If you choose to leave class, please send me an email to let me know.")

In Class

- First class: **Say something about the syllabus Accessibility Statement** at the beginning of the first class meeting. Consider a quick re-invitation for students to let you know about any changes that would make a difference at the beginning of subsequent classes (this is a best practice known as an "Access Check").
- First class: Consider, if you're having students go around to do introductions, inviting students to specify a pronoun preference.
- Try to avoid relying utterly on one form of information reception or another.
    - o Use visuals (handouts, the whiteboard) when info is mostly auditory
    - o When info is mostly visual, talk about or describe it (describe images, read text under consideration aloud)
    - o The third widely recognized learning style is kinesthetic. Consider activities that use visual-spatial information (asking students to create a concept map or other chart of the lecture or material), groupwork on the board, and so on.

      For more on learning styles, see: http://simons-rock.edu/academics/academic-resources/win-commons/study-skills/learning-styles-and-appropriate-strategies
- Pose a few essential questions for the following class so students can focus their thinking and prepare for class.
- Face students when you are speaking so that they can hear or lip read (don't talk to the chalkboard!). Avoid putting your hands on or in front of your mouth as you speak.
- When possible, send any available materials (such as Power Points) ahead of time so students can prepare hard copies of power points to look at or write on. Alternatively, post them on Chalk such that they "go live" when class starts.
- Be prepared to provide electronic copies of any class materials (power points, handouts, in class readings or activities, etc.) for students who use assistive technology to access

    texts. Ask the student what file format is easiest for them. For most users of assistive technology, the most easily accessible file formats are .doc, .doc, .txt, or .rtf.
- Provide clean copies (without highlighting, underlining, or marginal notes) of any of any electronic course materials, such as supplemental readings. Texts that are marked up cannot be read by assistive technology.
- When using any technological resources in the course (such as websites, PDFs, ebooks, learning software, or assigned online activities) check with the class at least a week or two ahead of time to make sure everyone in the class has the means to access each particular resource.
- Stop at planned intervals during class to do an access check, asking if everyone can hear or see the material. This is a good habit to get into whenever you use multimedia.

Classroom Set-Up
- While a regular seating chart isn't always practical, it is worthwhile for you as the instructor to sit in the same spot whenever possible, so that students can plan and adjust their own practices.
- Insist on clear aisles and doorways for accessibility.

Office Hours

If a student comes to discuss a learning or an access need:

- Ask what you should know to support them
- A few informal accommodations to suggest (which you can offer without changing any course materials):

  - laptop or visual support
  - hard copies or electronic copies of materials
  - a regular seat in the classroom
  - discreet signal that the student can use if they cannot hear or see the material

APPENDIX: BASIC DISABILITY ETIQUETTE

• If offering any assistance, always wait for a response and then follow the individual's instructions.

• When talking to a person with a disability, talk directly to that individual, not the friend, companion, or Sign Language interpreter who may be present. Even if communication is difficult, continue to communicate with the person you're addressing.

• Respect all assistive devices (i.e. canes, wheelchairs, crutches, communication boards) as personal property. Unless given permission, do not move, touch, or use them.

• If talking with a person using a wheelchair for any length of time, place yourself at their eye level by pulling up a chair, etc. (This is to avoid stiff necks and "talking down" to the individual.) Otherwise, just stand--crouching down next to a person may feel patronizing.

• Remember to show your face while talking with someone who is Deaf or hard of hearing—avoid looking away, covering your mouth with your hands, or chewing on a pen, etc.

• Do not shout or raise your voice unless asked to do so.

• If greeting someone who is blind or has a visual impairment, identify yourself and those who may be accompanying you.

• Do not pet or make a service dog the focus of conversation.

• If you're talking to someone who is blind or has low vision, let the individual know if you move or need to end the conversation.

• When interacting with a person who is visually impaired, follow their lead. Unless they ask, assume they can negotiate their surroundings unassisted, e.g., finding the door handle, locating a chair, etc. If you're in a restaurant or some other situation where people must take in a lot of information visually (e.g., a menu, scanning a buffet), offer to describe the options. As ever, ask first.

Language considerations

With any disability, avoid negative, disempowering words, like "victim" or "sufferer." Say "person with AIDS" instead of "AIDS victim" or "person who suffers from AIDS."

It's okay to use idiomatic expressions when talking to people with disabilities. For example, saying, "It was good to see you," and "See you later," to a person who is blind is completely acceptable; they use these expressions themselves all the time.

Many people who are Deaf communicate with sign language and consider themselves to be members of a cultural and linguistic minority group. They refer to themselves as Deaf with a capital "D," and may be offended by the term "hearing impaired." Others may not object to the term, but in general it is safest to refer to people who have hearing loss but who communicate in spoken language as "hard of hearing" and to people with profound hearing losses as Deaf or deaf. This is the terminology that's used in Deaf culture.

Instead of …
handicapped or crippled, **say people with disabilities**
he's mentally retarded**, say he has a cognitive disability or he has an intellectual disability**

she's autistic**, say she has autism** *[*n.b., *as mentioned below some advocates argue for "Autistic person"]*
he's a quad or crippled**, say he has a physical disability**
she's wheelchair- bound or confined to a wheelchair, **say she uses a wheelchair**
he's emotionally disturbed, **say he has an emotional disability**
handicapped parking, **say accessible parking**
he is mentally ill, **say he has a psychiatric disability**

patronizing terms to be avoided: special needs, handicapable, specially abled
For a slightly more in-depth set of disability etiquette tips, see
https://www.unitedspinal.org/disability-etiquette/#mental
For more on ableist words and terms to avoid, see also:
http://www.autistichoya.com/p/ableist-words-and-terms-to-avoid.html

Identity-first versus person-first language
Because disability metaphor and objectifying, diminishing language has been so prevalent in Western culture for so long, there have been many debates about what kind of language is most respectful. There are two major schools of thought, one more mainstream (person-first language), and one that has developed from activist movements in the disability community (identity-first language). This distinction is worth knowing about, since person-first language is most widely used, but some disabled people may prefer identity-first language.

Person-first language uses phrases like: "person with a disability" as opposed to "disabled person," with the rationale that disability is just one facet of a person's life.

Identity-first language prefers "disabled person," reasoning that disability has become a politicized identity with its own culture and community. One of the best examples of a disability community that has lobbied for identity-first language is the Autistic community. They argue for terminology like "an Autistic person" as opposed to "a person with autism," claiming "Autistic" as an identity-group adjective. An excellent explanation can be found here:
http://autisticadvocacy.org/identity-first-language/

APPENDIX: ASSISTIVE TECHNOLOGY

Many of your students with disabilities may use some form of **assistive technology** to enable and aid in reading, writing, communication, and mobility. Familiarizing yourself with the kinds of assistive technology your students are using to participate in class, take exams, and prepare assignments is an essential part of learning how best to adapt your teaching materials and classroom practices to make them as easily accessible as possible. Keep in mind that your students' facility and experience with assistive technology may vary greatly depending on when they acquired their disability, whether it's a temporary disability, the amount or kind of training they have had access to, and how long they have been using this form of assistive technology or this particular device. Still, defer to your students' preferences.

Mini Table of Contents for Quick Reference:
Print Disabilities
      Screen readers
      Audio-books and DAISY players
      Accessible file formats
      Braille displays
      Notetakers
      Dictation software
Assistive Technology for People Who Are Hard of Hearing/Deaf
      CART (Computer Assisted Real-time Transcription)
      ASL (American Sign Language) Interpreters

Software for Print Disabilities

Print disabilities include any kind of disability that prevents a person from gaining information from printed material in the standard way (such as visual impairment, perceptual disabilities, cognitive disabilities, learning disabilities, or physical disabilities that make it difficult to manipulate books or other forms of printed materials). There are a number of different kinds of software designed to assist people with print disabilities. Some change the visual appearance of the text by putting it in a larger font or changing the contrast or color of the text and/or background. Screen magnification programs allow the user to magnify the screen without losing resolution. **Screenreaders** and **Text-to-Speech** programs use computer voices to read text out loud and allow users to navigate a computer, smartphone, or tablet by means of touch and audio with minimal or no use of vision. Many students with print disabilities do some or all of their reading by audio and a screenreader or other text-to-speech software will allow them to read email, websites, documents, and books all by audio. If you have a student who uses a screenreader, he or she will most likely use a laptop with headphones to access texts or other written materials during class. All Apple products (including iPhones and iPads) have a screenreader and magnification software built-in, so your students may also be using smartphones or tablets. For these programs to be able to read out a text, the book or document must be in a digital format that the program can "see." Many (if not most) ebooks are not accessible to text-to-speech programs because of their DRM anti-piracy protection, and if websites are not designed with accessibility in mind they may also be difficult or impossible for

someone to read using these programs. It is also important to know that screenreaders, text-to-speech programs, and software that changes the size, color, or contrast of the text cannot read PDFs or other image files until the text has been "recognized" by OCR (Optical Character Recognition) software, which is software that looks at a scanned image and converts the image to text. Students may or may not have OCR software on their personal computer, which means that there may be more of a delay for some students in getting a PDF or scanned text converted into an accessible form.

What this means for you:
Students using any kind of assistive technology software will need to have all course materials and handouts in an accessible digital form. Student Disability Services will help students to obtain textbooks and other course materials in an accessible form. However, they require advanced notice, and it can take several days or in some cases two or three weeks to get a text in an accessible form through SDS. This means you need to plan your readings far in advance, and if you make last minute changes students may not be able to get a text in an accessible form in time. So plan ahead! You will also need to provide students with digital copies of any handouts or in-class assignments. Ask your students which file format they prefer. (Usually Word documents in a .doc, .docx, .txt., or .rtf format are the most accessible.) Students who use assistive technology software will probably also need to use a computer or tablet to take exams or quizzes. If you have course readings in a PDF form, students may need extra time to convert these readings to an accessible form. Any kinds of markings on the text (highlighting, underlining, marginal notes, or watermarks) will interfere with the text recognition software, which means that those sections of the text will come out as gibberish. So make sure to provide **clean copies** of the texts if at all possible. Students with print disabilities may also be uncomfortable or unable to read texts out loud during class. Another thing to keep in mind is that composing and editing can be labor-intensive or more difficult than usual, so we encourage you not to mark students down for typos, formatting difficulties, etc.

Audiobooks and DAISY players
Students with print disabilities may also use audiobooks to read the texts for the course. Listening to texts read by humans can be easier and more enjoyable than listening to a computer voice. Students may use commercially produced audiobooks if they are available. There are also services such as LearningAlly that provide books and textbooks read by volunteers. Students may listen to these books using their laptops, tablets, smartphones, or mp3 players. Less commonly, they may also use a DAISY player, which is an audio player designed specifically to play audiobooks for people with print disabilities and offers extra navigation features that make it easier to move to a particular chapter or page.

What this means for you:
If a student is using an audiobook, it may be more difficult for the student to refer to the text during class or during an open book exam. Depending on the format of the audiobook, students may or may not be able to move to a particular chapter or page, or to bookmark or highlight passages. Some audiobooks do not include page numbers, which will make it more difficult for a student to cite or reference a text. And again, a student who is using an audiobook may not be comfortable or able to read a text out loud during class (although some people with print disabilities may have the skill to do this when reading a text by audio).

Braille Displays and Notetakers

A **Braille display** (sometimes called a **refreshable Braille display**) is an electronic tactile device consisting of a row of rectangular cells, each of which contains a series of moveable pins. The pins are controlled electronically to move up or down to form braille characters. A Braille display allows the user to read text from a computer, smartphone, or tablet without having to print it out on paper using a Braille embosser. A **notetaker** is basically a computer designed for the visually impaired (with no screen). Notetakers have more limited functions than a laptop and are primarily used for typing and reading documents, emails, and books. Notetakers often have an attached Braille display.

What this means for you:
Braille displays and notetakers use screenreader software (with the output in Braille instead of audio), so all of the issues related to screenreaders and text-to-speech software apply here as well.

Dictation and Speech-to-Text Software
Students who have a disability that limits their ability to write by hand or to type on a keyboard may use **dictation or speech-to-text software** to write or to navigate a computer. This software "hears" a user speak and translates the speech into text.

What this means for you:
Students will need to use a computer or tablet to write in-class assignments, quizzes, and exams, and they will need to speak out loud to complete them. Student Disability Services will help to make arrangements for students to take exams in another location where they can feel free to speak out loud. But you should carefully consider your use of written in-class assignments. It can be uncomfortable for a student to speaking out loud during a "quiet" assignment when everyone else is silent, and it may also make a student uncomfortable if he or she has to leave the classroom to complete in-class assignments. If you intend to make use of written in-class assignments, talk to the student ahead of time to make a plan that the student feels comfortable with, which may involve allowing the student to complete the assignment later outside of class. You may also consider having all of the students do the assignment orally during class, telling their answers to each other in pairs or small groups.

Communication Through Text-to-Speech
Text-to-speech software can also be used to aid in communication. Students who have a vocal or speech impairment or a temporary loss of voice due to surgery or illness may use a computer voice to speak.

What this means for you:
Students who communicate through text-to-speech software may need more time to compose a response before speaking. Talk with the student about how they would like to manage this. One option is to arrange for a signal the student can use to notify you that they would like to speak. Then you can either pause the discussion and wait for the student to compose their comment or

say, "Zack, I see that you have something to say. Let's hear from Annie while you are preparing your comment and then I will come back to you." You should also make a plan for informal discussions or group work when students are not raising their hands and waiting to be called upon.

CART Services
CART, or Communication Access Realtime Translation, is a kind of open captioning that provides access to people who are Deaf or hard of hearing. CART may be on-site or remote. The way remote CART works is that a captioner (they call themselves CART providers, usually) is sitting somewhere (Colorado, etc.), listening in on an event via Skype (a microphone in the classroom or at the event is the "input" sound). As the captioner listens, they transcribe what they hear into a chat room, which the consumer watches on their laptop in class (it's also possible to project that chat room onto a TV screen for everyone to read--recommended, as it really benefits lots of people).

In the case of on-site CART, the captioner comes in person and sets up a stenography machine, transcribing as they listen. That transcription is connected to whatever laptop or projector/screen the captioning clients are looking at.

What this means for you:
If you're leading a class or event with CART services, it is extremely helpful to provide the captioner with any jargony terms, proper names, or acronyms that may come up, so that the CART providers can enter them into their stenography machines. It's also useful to speak at a moderate pace, as clearly as possible--and encourage others to do so as well!

ASL (American Sign Language) Interpreting
For culturally Deaf students who use American Sign Language, you may have a Sign Language interpreter in your classes. The interpreter translates spoken communication into ASL for the student, and voices what the student is signing in English.
What this means for you:
To best facilitate ASL Interpreting,
* consult with the student and the interpreter about the best positioning of you, student, and interpreter in the room, and established assigned seats as necessary
* be aware of backlighting from windows that may make the interpreter difficult to see, and be prepared to make adjustments as needed. It may be a good idea to check in with the student about visibility to give them permission to make requests.
* coach class participants to speak at a moderate pace and to speak as clearly as possible
* as much as possible, give the interpreter a list of proper nouns, jargon, and acronyms ahead of time (even a list at the beginning of class is better than nothing!)
* when speaking to the student, look at and speak to the student, not the interpreter.

To learn more:
Colorado State University's website has an extensive list of assistive technology options as well as accommodations that may be appropriate for specific disabilities.

http://accessproject.colostate.edu/disability/modules/at_glossary/at_glossary.php