



Accessible Library Instruction in Practice

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abstract: Disability is a reality in the library instruction classroom, yet despite ratification of the American Library Association (ALA) policy on people with disabilities, librarians seldom take part in discourse about restructuring library instruction to ensure it is inclusive and accessible. This essay discusses the imperative to serve students with disabilities. It also explores how Universal Design for Learning in the library instruction classroom can facilitate multiple forms of representation, expression, and engagement. Importantly, this conversation attempts to center disability within the classroom and to acknowledge the injustices of accommodation and retrofitting for learners with nonstandard abilities.

Introduction

Within librarianship, the discourse surrounding disability recognizes that our systems present barriers to people with disabilities within our normalized classroom structures. In January 2001, the American Library Association (ALA) Council unanimously approved the “Library Services for People with Disabilities Policy,” which states, “Libraries should provide training opportunities for all library employees and volunteers . . . to teach effective techniques for providing services for users with disabilities and for working with colleagues with disabilities.”¹ The policy calls for inclusive pedagogies that allow equitable access for students attending library instruction sessions. When they arrive at the library for a teaching session, students deserve an accessible learning experience, regardless of their abilities. Clearly, not all learners are the same, and librarians have begun to investigate pedagogical solutions accordingly. Librarian educators must strive for a balance of preparation and improvisation

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that provides students with clear directions and outcomes while offering flexibility in both the engagement and expression of learning.

Our campuses serve a significant number of students whose abilities place them outside the margins of standardized systems, both pedagogically and environmentally. According to the National Center for Education Statistics, 11 percent of undergraduates disclosed some sort of disability in the academic year 2011–2012.² The center's "Fast Facts" defines students with disabilities as those who "reported that they had one or more of the following conditions: a specific learning disability, a visual impairment, hard of hearing, deafness, a speech impairment, an orthopedic impairment, or a health impairment." This definition of disability is expressed in medical terms, an approach that situates it as a problem with individual bodies that need remedying, that categorizes disabled bodies as "other," and that labels them as not belonging. Alana Kumbier and Julia Starkey suggest that librarians instead "think in solidarity with disability justice movements" to "attend to the larger structural, systemic, or social transformations that could enable access for people with disabilities."³ According to this view, the systems are broken, not the people. In this paradigm, librarians must transform their systems of library instruction so they function more inclusively, rather than place the burden on the individual students challenged by a lack of access. Kumbier and Starkey's es-

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say is groundbreaking in paving the way for librarians to utilize the frameworks that disabilities studies scholars have already created to transform library spaces and services. Kumbier and Starkey assert that documents like the ALA disabilities policy treat "equity and access as economic, political, and technical problems to be solved"⁴ or impose what they call a "tick-box framework" that attempts to

measure performance through indicators that demonstrate achievement.⁵ Their essay is not explicitly about instruction, but it encourages instruction librarians to create accessible learning environments and materials by adopting the social model of disability. The social model, which disability activists embrace, proposes that people are disabled by barriers in society, not by their medical condition.⁶

Critical pedagogy requires educators to examine and confront problematic systems that present barriers to access in the classroom. When these systems are transformed, both teachers and students become free to genuinely learn from one another. Paulo Freire asserts, "The oppressed are not 'marginals,' are not people living 'outside' society. They have always been 'inside'—inside the structure which made them 'beings for others.'"⁷ When students cannot access learning because of barriers, they experience oppression—in this instance, exclusion from the learning process. Librarians are committed to social justice and care deeply about students, but librarian instructors often approach learners with disabilities as problems that need to be solved on a case-by-case basis. Perhaps instead of viewing disability as an isolated instance, librarians should reconceptualize how the learning environment functions. This essay seeks, as Kumbier and Starkey suggest, to shift the discourse in library instruction surrounding access and pedagogy by adopting the language of the academic field of disabilities studies.⁸ How can librar-



ians reshape their pedagogy to better serve all students? What resources are available for creating flexible, accessible learning environments that empower diverse bodies? It is time to engage in a deeper conversation about the relationship between disability and library instruction, starting with recognizing the barriers within our structures that categorize students with disabilities as “other.”

This essay uses Universal Design for Instruction (UDI) and Universal Design for Learning (UDL) as conceptual approaches to reframe the discussion of accessibility and inclusion in academic libraries. Universal Design for Instruction is an educational strategy based on research in the learning sciences, including cognitive neuroscience, that aims to develop flexible teaching methods to accommodate individual learning differences. A closely related concept, Universal Design for Learning, offers a set of principles and a conceptual framework that helps instructors envision new ways to engage students in learning. Universal Design for Instruction focuses on the instructor, while Universal Design for Learning centers on the learner. Both are part of a wider approach called *universal design*, which strives to create products and environments usable by people with a wide range of abilities, without the need for accommodation or specialized design. Through utilizing these discourses, the author hopes to help librarians begin to approach issues of access and ability differently. Importantly, this conversation intends to center disability within the classroom and to acknowledge the injustices of accommodation and retrofitting.

Accommodation and Retrofitting

As the system stands, librarians have no clear legal path for ascertaining the abilities of students entering their classroom. Historically, course instructors have relied on accommodations to guide the retrofitting of curricular design on a case-by-case basis. This makes sense to a degree: teachers design standardized curricula for students, who are a populous and unspecific demographic. Accommodations are limited, however. They can patch isolated gaps in the learning experience but do not address the learning process holistically. In her contribution to the collection of essays titled “Multimodality in Motion,” Melanie Yergeau admonishes the retrofitting of learning experiences.⁹ She says, “Rather than retrofitting already-existing artifacts—and rather than deciding which retrofits are reasonable and which are unreasonable—I’m asking us to wholly reconsider some of our key topics.”¹⁰ Yergeau reminds us:

Our institutional conceptions of accommodation are predicated on problemed bodies and spaces rather than problemed infrastructures and practices. To accommodate is to retrofit; it is to assume normative bodies as default and to build spaces and infrastructures around those normative default bodies.¹¹

One positive outcome of the system of accommodations is that often (though not always) the formal channels for seeking accommodations—specifically, the submission of disability services paperwork—opens a conversation between student and teacher. But students have the right to not reveal disabilities, and teachers cannot insist on disclosure of the disability they must accommodate. Instructors are obligated to honor the accommodations but may lack contextual understanding of the disabilities that neces-

sitate them. Many librarians point to exclusion from this system of accommodation as a barrier to better serving students with disabilities: if they do not know a learner's needs, they cannot adjust for them.

Though not the best answer, accommodations are the only structural system on many campuses that advocates for access for students with nonstandard learning needs. Accommodations, however, will not solve the problem of disability in the library instruction classroom. Retrofitting for disability is an implicit commitment to a system that serves only normative bodies and views disabled bodies as what Freire calls "others."¹² Jay Timothy Dolmage talks about the temporary nature of accommodation as a barrier rather than an aid to learning. He asserts:

Retrofit helps us to understand this relationship. That is, when the accommodations that students with disabilities have access to, over and over again, are intended to simply temporarily even the playing field for them in a single class or activity, it is clear that these retrofits are not designed for people to live and thrive with a disability, but rather to temporarily make the disability go away.¹³

Consider a scenario in which a student is granted the accommodation of receiving all the instructor's handouts in an electronic format 24 hours before class. A teacher may guess that the student has low vision, but unless the student discloses the nature of his or her disability, the teacher can only conjecture. Furthermore, this learner must submit accommodation letters to each professor separately (likely four to five times per semester for each semester enrolled in college) and must adjust to the way each individual professor decides to provide accommodation. While this accommodation, in theory, enables this student to access the learning environment, the cumbersome requirements demand a high level of emotional labor and extra time spent on the part of both the student and the professors to provide this accommodation.

If librarians truly want to center disability within the library instruction classroom, they must move beyond the legal dictates of accommodation and retrofitting, and instead design their classrooms as flexible laboratories of engagement and learning. This environment, moreover, must not focus on the typical body. To move beyond retrofitting,

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librarians need to create environments that imagine a new system entirely. Freire says, "The solution is not to 'integrate' them [the oppressed] into the structure of oppression, but to transform that structure so that they can become 'beings for themselves.'"¹⁴

Adopting a flexible pedagogy within the library instruction classroom ensures that librarians avoid the risky practice of retrofitting the learning experience based on "rea-

sonable accommodation." Specifically, they must embrace student-driven demonstrations of conceptual engagement within the classroom. This is admittedly a challenge for many



instruction librarians, who may feel that their pedagogical knowledge is lacking or that their professional development time is limited.

One resource available to librarians is Universal Design for Learning (UDL). In a later section, this essay will discuss Universal Design for Learning in more depth and demonstrate how this framework can transform the approach to library instruction.

The Literature of Library Instruction and Disability

Two decades ago, librarians began to assess the intersection of disability and library services. Much of the literature on the topic deals with the uncertainty of serving disabled library users, pointing to a lack of information about specific cases of disability. Mary Beth Applin writes, "Although libraries have quickly moved to remedy most physical obstacles impeding access to their facilities, many have not restructured service provision such as bibliographic instruction to accommodate the special needs of students."¹⁵ As roadblocks to accessible instruction, Applin cites a lack of knowledge about disabilities, insufficient technology, and the reality that students rarely disclose their needs to a librarian. Likewise, Catherine Carter cites lack of disclosure as a hindrance to accessible instruction and offers some best practices, such as providing written instructions, using easily understood language, and following a concise, sequential lesson plan. These practices are all elements of Universal Design for Learning, although Carter does not specifically say so.¹⁶ Both Applin and Carter are concerned about the structures that impede librarians from adapting to specific instances of disability within a library instruction event, forcing them to view individuals with disabilities as problems to be solved through accommodation and retrofitting.

Surveying library services to students with disabilities through site visits to eight state university libraries, Sue Samson reports that only 12.5 percent of these libraries had outreach activities to meet students with disabilities. She states, "Instruction offers unlimited opportunities to address diverse learning styles and abilities," and she advocates for the adoption of Universal Design for Instruction.¹⁷

Stephanie Graves and Elizabeth German audited the websites of members of the Association of Research Libraries (ARL) for documentation of accessible teaching practices and found that only 20 percent of the 68 libraries included accessibility language on their instruction request forms.¹⁸ Graves and German advocate for the inclusion of accessibility language in communications with course instructors and in the documentation for programs of instruction. Importantly, they recommend accessibility statements in library instruction request forms, along with an invitation to discuss the accessibility needs of a class. These recommendations go a long way in centering disability in the library instruction classroom. They proactively open the conversation between librarian and course instructor, and they acknowledge the potential, even the likelihood, for students to have different abilities in the beginning of the design phase of instruction. Graves and German's recommendation that libraries include accessibility language would signal to both instructor and student that the librarian is aware of diverse abilities in the classroom and will work to provide equitable access for all.¹⁹

Library literature has only a few articles exploring accessible teaching practices. A handful of studies, however, test the efficacy in the library instruction classroom of



universal design. Ted Chodock and Elizabeth Dolinger introduce the concept of Universal Design for Information Literacy (a blend of Universal Design for Learning and Universal Design for Instruction) as a solution to behavior problems in the classroom.²⁰ Chodock and Dolinger acknowledge that the behaviors they cite most likely result from learning disabilities, echoing previous studies in reminding readers that librarians are not privy to disability disclosures. The authors also give librarians a pragmatic and detailed description of universal design. Their work makes a valuable contribution to the discourse on accessible pedagogy in librarianship.

Ying Zhong conducted a study to examine the effectiveness and validity of Universal Design for Learning in a semester-long library instruction course. Zhong found

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that students, including those with disabilities, responded positively to hands-on activities, the provision of concise presentation notes, and group work.²¹ Katy Kavanagh Webb and Jeanne Hoover reported on applying UDL to library tutorials for biology students that “include options for students with different learning preferences.”²² Their study focused on learning preferences rather than abilities, but it offers a useful treatment of the principles of universal design. It recommends asynchronous library instruction—methods such as LibGuides or

recorded tutorials that learners can access at their own pace, anytime, anywhere—as a meaningful demonstration of Universal Design for Instruction.

Universal Design: A Conceptual Framework

Librarians have explored use of universal design for several years. This essay departs from most other library literature, which focuses on universal design as a final product, and instead treats it as a methodology or a conceptual framework within the educational setting that allows teachers and students to negotiate a learning environment accessible to all. The two most prominent applications of universal design within the classroom are Universal Design for Learning (UDL) and Universal Design for Instruction (UDI). While both are grounded in the principles of universal design, they serve different purposes. UDI focuses on people learning, while UDL centers on teachers teaching.²³ When combined, UDL and UDI provide an open path for teacher and student to operate in an accessible learning environment. For the purposes of this essay, UDL will be applied to the library instruction classroom to illustrate its potential.

According to CAST (Center for Applied Special Technology), a nonprofit research and development organization that works to expand learning opportunities for everyone, especially students with disabilities, “Universal design for learning (UDL) is a framework to improve and optimize teaching and learning for all people based on scientific insights into how humans learn.”²⁴ Three qualities set Universal Design for Learning apart from universal design for physical spaces. These three qualities are defined as:

1. multiple means of representation: recognition networks/ the “WHAT” of learning;
2. multiple means of expression: strategic networks/ the “HOW” of learning;
3. multiple means of engagement: affective networks/ the “WHY” of learning.

Representation focuses on teachers’ dissemination of information to students. For example, when teachers introduce a new idea or prepare a class to complete a task, they should offer visual, textual, and oral explanations and instructions, including both diagrams and text explanations of ideas.

Expression is generally considered the way that students demonstrate learning. Expression enables them to respond verbally to peers, perhaps in group work or during a think-pair-share, a cooperative exercise in which students work together to solve a problem or answer a question. Expression also gives students an opportunity to self-select as a group’s representatives in presenting joint findings to the class, and it enables groups to respond textually as well as verbally to classroom discussion and assignments.

Finally, engagement, within face-to-face classes, can mean giving students the opportunity for a verbal or textual response or incorporating multimodal responses, such as allowing them to respond by listing, concept mapping, or drawing, rather than only through prose text. Engagement can also mean providing resources that students can return to after class, with the understanding that some learners need to visit materials multiple times or in different environments. This flexibility facilitates learning for students with a variety of abilities.

Dolmage discusses the ideas behind the main principles of universal design: equitable use; flexibility in use; simple and intuitive use; perceptible information; tolerance for error; low physical effort; and size and space for approach and use.²⁵ These principles guide educators in the design of representation, engagement, and expression, and provide an aspirational philosophy for the development of an accessible learning environment. Dolmage cautions, however, that the list of principles might look like a checklist but should not function as such. Rather, universal design should be considered ways of acting or “a way to move.”²⁶ Educators should keep these guidelines in mind, asking such questions as, “What kind of physical effort does this ask of my students?” or “How simple and intuitive is this?” or “What are some of the other ways I can think of this being done?” Universal Design for Learning can sound intimidating in the beginning because it has the potential for limitless possibilities in representation, expression, and engagement. As educators adjust to this new way of thinking, however, it becomes easier to recognize alternative ways to accomplish goals.

Universal design, presented in this way, reflects the participatory elements of design that Sushil Oswal advocates when he urges “personalizing this design process by working with disabled users as intermediaries for developing standards for individual products.”²⁷ Dolmage echoes Oswal, suggesting that teachers should incorporate the principles of usability testing in classrooms as a way of “responding to changing spaces and developing new technology not with panic and reduction but with planning for

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hybridity and transformation.” Including students in the choice about how they engage in learning transforms the classroom into a more productive space.²⁸ Dolmage asserts, “The potential of UD [universal design] . . . is a future with more claiming of disability and a more positive experience of it, not the erasure of disability as some would suggest.”²⁹ Far from a complete solution, most experts agree that UDL is where educators should begin their efforts for creating inclusive classrooms; it is a frame of mind rather than a finished product. It is a commitment to creating a dynamic learning environment that allows students to thrive by enabling them to engage with the curricular content to the utmost of their potential, and by allowing for expression and engagement to manifest in diverse ways. Anne-Marie Womack writes that educators should design a

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learning environment that “centers the experience of disabled students within a universal design framework to create more inclusive pedagogy.”³⁰ When teachers concentrate on those whose access has been traditionally excluded, they create opportunities for everyone. Womack argues that beginning with universal design allows educators to focus both on “creating access for students with disabilities and empowering all students” because “agency, for all students, comes from access.”³¹

However, Dolmage warns that using the “benefits for all” language of universal design once again moves disability from the center of the conversation.³² An important takeaway is that universal design is neither a checklist of elements nor specifications for curriculum planning. Rather, it is a commitment on the part of the educator to remain open to the possibilities of new representation, engagement, and expression within the learning environment, and a pledge to make that environment accessible to a greater number of students. It is also important to remember that universal design will never eliminate the need for individual accommodations, though it may reduce the demand for certain types of assistance.

Harnessing Multimodality to Promote Accessible Learning

UDL acknowledges that there is no one-size-fits-all learning environment and instead creates space for multiple modalities, including analog, print, and handwritten channels. It also creates opportunities for demonstrating learning through multiple forms of expression. This might be a radical pedagogical adjustment for some librarians because it alters how such documentation as performance indicators and learning outcomes are composed. It also impacts their perception of the space in which they operate. Library instruction for first-year writing often takes place within a computer-based instruction lab at the library. Traditionally, each student has access to a computer, and the class often engages in computer-based activities focused on helping them learn research practices. Although computers ostensibly offer multimodality in representation, expression, and engagement, they do not guarantee accessible instruction. Indeed, Stephanie Kerschbaum says:



While many of us celebrate multimodal richness, when considered from a disability perspective, multimodality can be a problem rather than an asset. That is to say, multimodal texts and environments can frustrate participants' ability to effectively engage within a variety of kairotic spaces. This situation results in what I call *multimodal inhospitality*.³³

In other words, although library sessions in computer labs are usually considered multimodal instruction, the technology might prove inhospitable to some students. Kerschbaum asserts, "Multimodal inhospitality occurs when the design and production of multimodal texts and environments persistently ignore access except as a retrofit."³⁴ When choosing new instructional technology applications to use in the classroom, librarian teachers must consider the accessible advantages and disadvantages of these applications and offer alternatives for engaging in classroom activities. Although certain applications may be inhospitable to some students, other learners may prefer them. In advocating for universal design, Dolmage says, "If we design a classroom activity for a broad range of minds, then all students will have a genuine opportunity to learn and to create new knowledge." Universal design allows teachers to change the idea of accessibility in their classrooms and in their teaching by accepting the concept that something can be learned in more than one way.

The key to inclusivity and diversity in teaching and learning is flexibility, not technology. Flexibility involves thinking about how best to harness technology, such as computers, to broaden the options for representation, engagement, and expression in the classroom without assuming that computers will solve all accessibility problems. Flexibility ultimately means allowing variety in both delivery of and engagement with class materials. When teachers employ a hybrid style of delivery, they provide verbal and written directions, give oral and image-based descriptions of concepts, and allow for nonlinear application of ideas. This style requires educators to create accessible digital learning objects, such as electronic materials and quick guides with hyperlinks and alternative (alt) text, text descriptions that appear when a user mouses over an image to help users with low vision. This approach may mean designing a Web-based repository (for example, a LibGuide or a course page on the students' learning management system) to host these learning objects for later use. It may also mean providing print for those students who need or prefer to engage through written response. The preparation required for teaching using universal design can be challenging, but many of these instructional materials can be redeployed and shared with other teachers, which helps balance the investment of time. Tutorials, such as videos and learning modules, can be created to supplement face-to-face instruction, focusing on particular processes or concepts that contribute to learning goals but remaining flexible enough to work for a variety of assignments and to be used by students independently to help them meet their own goals as developing writers and researchers.

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Universal Design for Learning in Practice

It is helpful to examine UDL in practice within the library instruction environment to envision what flexibility in the classroom means. It entails creating more hospitable classrooms that enable students to learn in an accessible environment. UDL is a frame of mind or a set of principles that guide the development of curriculum and classroom activities, and it can be implemented in numerous ways using myriad modalities and tools. The remainder of this essay will concentrate on examples of the qualities and principles of UDL within the specific context of the library instruction classroom.

Multiple Means of Representation

As mentioned before, *representation* refers to the ways in which curricular content is disseminated to learners. Multiple means of representation includes modality, but it also is concerned with temporality and enabling students to learn at their own pace. It includes, for example, making information and materials available before and after a classroom event, as well as giving students time before or after class to review materials and to formulate responses to questions or to develop their own questions about the materials.

One key to effectively practicing the principles of UDL in the classroom is to consider the representation of material using multiple modes and forms of expression. If the instructor delivers material in more than one way, learners can choose how to engage. Take, for example, the concept of topic and keyword development. There are multiple

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ways to present this idea through text and visual diagrams, and each provides a different access point to the concept. Some students might access a mind map of a topic, while others might engage more effectively with a hierarchical list of synonyms. In Figure 1, both a textual list and a visual diagram model are embedded directly into an electronic document, which can be displayed on a presenta-

tion screen. Both the list and the diagram can also be included in a LibGuide or learning management system course page that the librarian has prepared ahead of time. This allows students to engage with one or more representations of the materials, which helps to reinforce the concept. The teacher librarian also explains the concept verbally, and the electronic document describes it in a short text paragraph. See Figure 1.

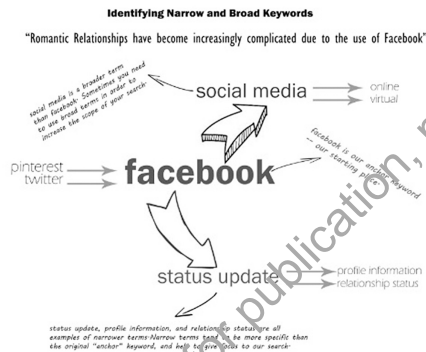
Importantly, offering choices for representation empowers students to begin envisioning modes of expression for themselves by introducing the notion that the same idea can be stated in diverse ways. Through multiple modes of representation, classroom materials can be made available to all students through a variety of channels, mitigating the need for anyone to request an accommodation. Furthermore, students who for one reason or another have not requested accommodation will perform better if they can access materials before and after class.

Step 4: The key to research is building a bank of words and phrases to use as search terms. In order to do this, find some words or phrases that are related to the words you came up with in step 3. Try to think of ways you can break each idea down into smaller ideas.

Example 1:

(broad)
Animal
Pet
Dog
working dog
show dog
german shepherd
yorkie
 (narrow)

Example 2:



Write some related broad and narrow terms down for your topic here. You can create a concept map or a hierarchical list for this task. You have the option of using Bubbl.us, and if you do use it, try to download the JPEG and insert it as an image here to represent your work. You can also use the Insert Shapes option in your word processor. Let your librarian know if you need help with this step!

Figure 1. Accessible instruction about keyword searching provides clear instructions but does not prescribe a specific visual arrangement of keywords, instead offering students a variety of options. In example 1, keywords are organized in a hierarchical list from broad to narrow. Example 2 shows keywords arranged in a concept map, a diagram that uses arrows to indicate relationships between the words.

Multiple Means of Expression

Expression refers to the manner in which students demonstrate learning and engagement with curricular materials. Multiple means of expression requires educators to negotiate and recognize diverse statements of a concept. Returning to the example of keyword and topic invention, many students enjoy visually diagramming their topic. Figures 2 and 3 show different expressions of diagramming in response to the suggestion "Write some related broad and narrow terms down for your topic here."

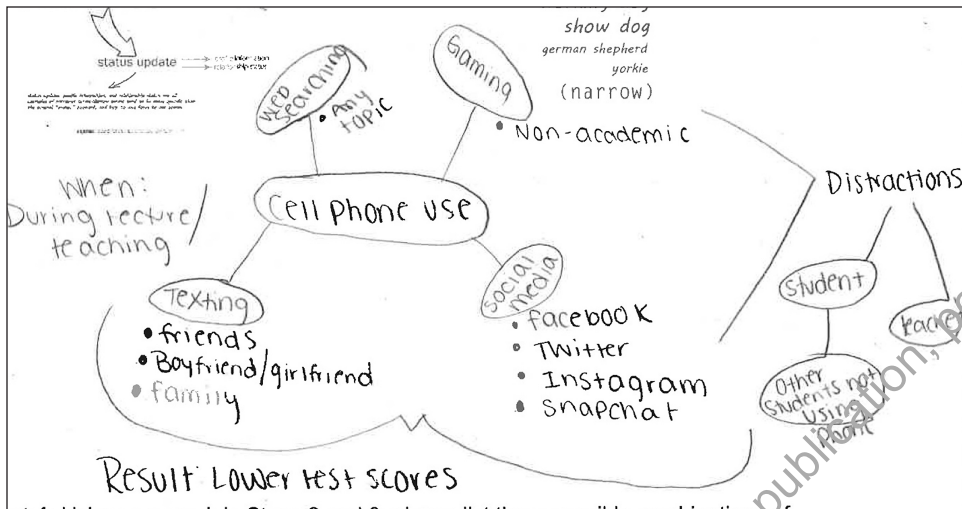


Figure 2. In accessible instruction, students have a choice of tools to visually arrange their keywords. In this example, keywords are arrayed in a concept map drawn with pen and paper. The main keywords are enclosed in circles, and the relationships between them are indicated by lines connecting the words.

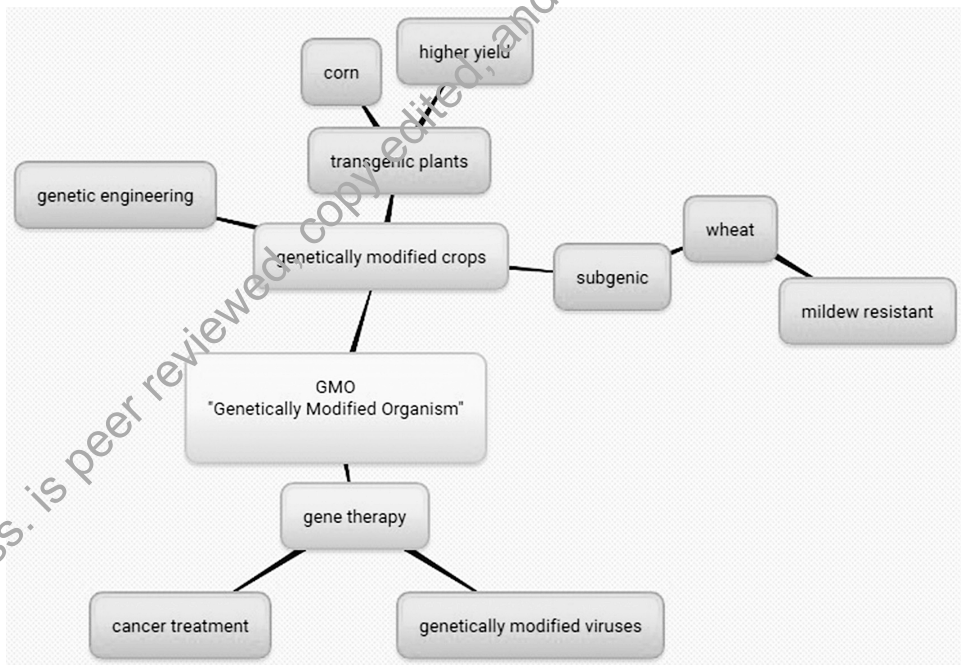


Figure 3. Keywords have been arranged in this visualization using the free online mind mapping tool Bubbl.us. Many students find that they love Bubbl.us, but it can prove inhospitable to some learners, such as those with color vision challenges and reduced fine motor skills.



In both examples, students have chosen to brainstorm by creating a diagram or a mind map to visually organize relationships between concepts, ideas, or other information about their topics. The student in Figure 2 chose to print the material by hand, while the student in Figure 3 opted to use an electronic version. If the instructor offers both electronic and print materials, learners can express their brainstorming ideas by drawing a diagram by hand or by using a mind mapping application such as Bubbl.us,³⁵ which can be inserted into the material as a jpg. Students can also take a picture of the diagram with their phone to insert it into an electronic worksheet. These expressions facilitate the process of invention and brainstorming that enables students to prepare to research and write about their chosen topic. It is important to note that, while the mind mapping application Bubbl.us offers a rich experience for some learners, it requires them to see distinct colors and to use a mouse. It does not allow for navigation by tabs or screen reading, which could present accessibility barriers for some learners; in other words, for some students, Bubbl.us can be inhospitable. Because of this, mind mapping using an application such as Bubbl.us should be only one option among many for expressing, rather than a specified activity to complete a learning goal. Other choices, such as diagramming by hand or using an application that is more accessible, should be equally valued as demonstrations of learning.

Not all students find visually negotiating their topics to be a useful exercise; some prefer to draft ordered text in numbered or unnumbered hierarchical lists. Because universal design allows for multiple modes of expression and engagement, librarians can permit some students to use Bubbl.us mind maps, while others type paragraphs or hierarchical lists in an electronic document, and still others express through mind mapping or writing with pen and paper or on a whiteboard. All of these activities achieve the same pedagogical goal.

Within these examples of expression, the student in Figure 4 has chosen to write a list of broad and narrow keywords by hand, while the student in Figure 5 has opted to create a list in an electronic document. The complexity and intellectual engagement with the derivation of keywords are commensurate, and they also equal the visual diagrams shown in Figures 2 and 3. None of these four examples of expression is more valid than any other, and each allows the student to negotiate the concept of broadening and narrowing a topic as a method of topic analysis and keyword development.

These four examples of expression represent a range of accessibility from a disability standpoint. The Bubbl.us-created application has low accessibility because it requires specific sight and motor skill abilities to use. Nevertheless, the electronic version of the hierarchical list can be increased in size and is accessible through a screen reader and tab navigation, so it is a robust option for students who learn better visually and have good vision and motor skills. Some needs and abilities are not met by any of these four expressions. The point of sharing four examples is not to claim that the system is fixed by such means but rather to model the diversity in expression that can be achieved and to encourage further variety in engaging and expressing concepts in other ways.

Multiple Means of Engagement

Engagement refers to the level of motivation students exhibit. Motivation is impacted not just by the learners' desire to participate but also by the resistance or barriers they

Write some related broad and narrow terms down for your topic here:

Prosthetics
|
neural
|
CO-enzyme
|
Brain implants
|
electrodes
|
Restoring brain/spinal cord
|
rudimentary sense of touch

Figure 4. A list of both broad and narrow keywords written with pen and paper.

Write some related broad and narrow terms down for your topic here:

- GMO
- Genetically Modified Organisms
- Genetically Modified Crops
- Transgenic Plants
- Wheat
- Mildew Resistance
- Subgenic Plants
- Corn
- Higher Yield

Figure 5. A list of both broad and narrow keywords created with a word processing application.



encounter. Barriers to learning include insufficient time to formulate responses or react to new ideas, lack of representation in a mode or format that is amenable to the student's learning needs, and difficulty expressing learning in a restrictive single mode or format. Barriers also include multimodal inhospitability and a number of physical barriers.³⁶ According to CAST, another aspect of engagement is that of student efficacy. Multiple means of engagement are promoted through minimizing distractions and threats, structuring coping strategies, self-assessment and reflection, goal setting, the building of autonomy, and the development of collaborative relationships. Librarians can provide multiple means of engagement through their commitment to numerous methods of representation and expression, as well as by including these other elements within their library instruction lesson plan. In the instance shown in Figure 1, the librarian included clear, simple instructions with multiple examples to demonstrate the activity of building a bank of keywords. The instructions also explained the purpose for the activity and gave students autonomy and direction in engaging with the content and demonstrating their learning of the concept.

Librarians can provide multiple means of engagement through their commitment to numerous methods of representation and expression . . .

Challenges for Librarians Enacting UDL

There are obviously many benefits of Universal Design for Learning; there are also, admittedly, a few challenges. Within the library instruction classroom, UDL potentially creates a challenge for improvisation, but this problem is not insurmountable. To execute UDL well requires intentional preparation and provision of materials for later use. It is difficult to design multiple modes of representation and expression quickly. For example, if a librarian is working with students to search for a specific type of source and realizes that they need extra instruction on source evaluation, it could be difficult to supply those students with multiple forms of representation if the librarian did not anticipate covering the topic. To plan for scenarios like these, librarians need to prepare small, modular mini-lessons that can be spontaneously used in improvisational situations as a solution to the problem. Librarians can likely anticipate the need for certain interventions based on previous experience in the classroom; they often know where students encounter trouble in the research process. The successful implementation of UDL requires a high level of understanding of the concepts being taught. If a teacher knows the content well and is committed to flexibility, new and innovative forms of representation, engagement, and expression can manifest in an improvisational manner.

Within the "one-shot" or one to three sessions of library instruction, it is difficult to accommodate some modes of student expression and engagement. For example, it is challenging to allow students to record verbal responses and submit them while still in the classroom. Because the librarian is not always the instructor of record, students often cannot turn in work after the session. The librarian is often not embedded in the class. Creating a graded homework assignment is a design element that would have to be negotiated as a part of the course curriculum in partnership with the instructor of



record, who would have to facilitate allowing the librarian access to student responses when they are turned in. Even if this model is adopted, librarians typically juggle a large number of classes during a semester and may have difficulty keeping students and classes straight. These challenges may present obstacles for instruction librarians, but all of them can be overcome when librarians commit to transforming the systems of library instruction. The benefits of UDL far outweigh the challenges.

Conclusion

Librarians already seek to make their classrooms more inclusive and accessible, and Universal Design for Learning provides the conceptual framework for developing accessible instruction because it represents a commitment for educators to be open-minded and intentional in how they teach. Claiming that anything functions as a monolith of universality is inherently flawed logic; expecting that a teacher has planned for or can prepare for all contingencies will result in failure. A need for individual accommodations will continue because the systems within higher education are inherently oppressive and treat people with disabilities unfairly. Dolmage reminds us that “this problem of universality is of course connected to normativity.”³⁷ While accessible instruction can be complicated in the unpredictable library instruction classroom, librarians can use pedagogy and disability studies to inform their teaching. UDL provides a set of curricular qualities and principles that enables librarians to avoid the frustration of leaving students out of the accommodations system, and it provides a framework for imagining multiple roads to the same destination within the learning environment. The most important takeaway from this conversation, therefore, is that Universal Design for Learning is a mind-set founded in flexible teaching and learning. It acknowledges that both teaching and learning can manifest in myriad forms.

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Notes

1. Association of Specialized, Government and Cooperative Library Agencies, American Library Association, “Library Services for People with Disabilities Policy,” 2006, <http://www.ala.org/asgcla/resources/libraryservices>.
2. National Center for Education Statistics, “Fast Facts,” <https://nces.ed.gov/fastfacts/display.asp?id=60>.
3. Alana Kumbier and Julia Starkey, “Access Is Not Problem Solving: Disability Justice and Libraries,” *Library Trends* 64, 3 (2016): 471.
4. *Ibid.*, 470.
5. *Ibid.*, 477.
6. *Ibid.*, 473.
7. Paulo Freire, *Pedagogy of the Oppressed*, 30th anniversary ed., trans. Myra Bergman Ramos (New York: Continuum, 2007).
8. This move follows in the footsteps of James Elmborg, Heidi Jacobs, and Emily Drabinski, who all call for librarians to use rhetoric and composition scholarship to supplement

- discourse on library instruction. See James Elmborg, "Critical Information Literacy: Implications for Instructional Practice," *Journal of Academic Librarianship* 32, 2 (2006): 192–99; James Elmborg, "Lessons from Forty Years as a Literacy Educator: An Information Literacy Narrative," *Journal of Information Literacy* 11, 1 (2017): 54–67, doi:10.11645/11.1.2190; Heidi L. M. Jacobs, "Information Literacy and Reflective Pedagogical Praxis," *Journal of Academic Librarianship* 34, 3 (2008): 256–62; Emily Drabinski, "Toward a Kairos of Library Instruction," *Journal of Academic Librarianship* 40, 5 (2014): 480–85.
9. "Multimodality in Motion" is a collaborative project that is heavily referenced throughout this essay. It is a collection of essays published as a digital project in *Kairos: A Journal of Rhetoric, Technology, and Pedagogy* 18, 1 (2013). Since it is a digital project without pagination, the title of individual essays will appear in the endnotes to facilitate identifying them.
 10. Melanie Yergeau, Elizabeth Brewer, Stephanie L. Kerschbaum, Sushil Oswal, Margaret Price, Michael J. Salvo, Cynthia L. Selfe, and Franny Howes, "Multimodality in Motion: Disability & Kairotic Spaces," *Kairos: A Journal of Rhetoric, Technology, and Pedagogy* 18, 1 (2013), <http://technorhetoric.net/18.1/coverweb/yergeau-et-al/pages/reason/index.html>.
 11. Melanie Yergeau, "Reason," in "Multimodality in Motion."
 12. Freire, *Pedagogy of the Oppressed*, 74.
 13. Jay Timothy Dolmage, *Academic Ableism: Disability and Higher Education* (Ann Arbor: University of Michigan Press, 2017), 70.
 14. Freire, *Pedagogy of the Oppressed*, 74.
 15. Mary Beth Applin, "Instructional Services for Students with Disabilities," *Journal of Academic Librarianship* 25, 2 (1999): 139.
 16. Catherine J. Carter, "Providing Services for Students with Disabilities in an Academic Library," *Education Libraries* 27, 2 (2004): 14.
 17. Sue Samson, "Best Practices for Serving Students with Disabilities," *Reference Services Review* 39, 2 (2011): 264, 272.
 18. Stephanie J. Graves and Elizabeth German, "Evidence of Our Values: Disability Inclusion on Library Instruction Websites," *portal: Libraries and the Academy* 18, 3 (2018): 559–74, <https://doi.org/10.1353/pla.2018.0033>.
 19. *Ibid.*, 570.
 20. Ted Chodock and Elizabeth Dolinger, "Applying Universal Design to Information Literacy: Teaching Students Who Learn Differently at Landmark College," *Reference & User Services Quarterly* 49, 1 (2009): 24–32.
 21. Ying Zhong, "Universal Design for Learning (UDL) in Library Instruction," *College & Undergraduate Libraries* 19, 1 (2012): 33–45.
 22. Katy Kavanagh Webb and Jeanne Hoover, "Universal Design for Learning (UDL) in the Academic Library: A Methodology for Mapping Multiple Means of Representation in Library Tutorials," *College & Research Libraries* 76, 4 (2015): 541, <https://doi.org/10.5860/crl.76.4.537>.
 23. There are multiple sources that a reader can investigate to learn more about these two frameworks. Some recommended places to start would be: Dolmage, *Academic Ableism*; David R. Black, Lois A. Weinberg, and Martin G. Brodwin, "Universal Design for Learning and Instruction: Perspectives of Students with Disabilities in Higher Education," *Exceptionality Education International* 25, 2 (2015): 2–3; Raymond Orkwis and Kathleen McLane, "A Curriculum Every Student Can Use: Design Principles for Student Access," 1998, ERIC/OSEP (Education Resources Information Center/Office of Special Education Programs) Topical Brief, ERIC Clearinghouse on Disabilities and Gifted Education, Council for Exceptional Children, ERIC Document ED423654.
 24. CAST (Center for Applied Special Technology) is a nonprofit education research and development organization that works to expand learning opportunities for all individuals through Universal Design for Learning, <http://www.cast.org/>.



25. Dolmage, *Academic Ableism*, 116.
26. Ibid.
27. Sushil K. Oswal, "Ableism," in "Multimodality in Motion."
28. Dolmage, *Academic Ableism*, 131.
29. Ibid., 123.
30. Anne-Marie Womack, "Teaching Is Accommodation: Universally Designing Composition Classrooms and Syllabi," *College Composition and Communication* 68, 3 (2017): 494, <http://www.ncte.org/library/NCTEFiles/Resources/Journals/CCC/0683-feb2017/CCCC0683Teaching.pdf>.
31. Ibid., 500.
32. Dolmage, *Academic Ableism*, 144.
33. Stephanie Kerschbaum, "Modality," in "Multimodality in Motion."
34. Ibid.
35. A mind map is a graphical representation of ideas and concepts. Bubbl.us, <https://bubbl.us>, is a free mind mapping application that does not require students to register or sign in and requires little instruction to use. It is a single example of an alternate tool that can be used for brainstorming.
36. This is in no way a comprehensive list of barriers. It is only meant to be a sampling of the barriers that many students have and do encounter during learning events.
37. Dolmage, *Academic Ableism*, 134.

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