Designing for Everyone: Accessibility, Inclusion, and Equity in Online Instruction

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Designing for Everyone: Accessibility, Inclusion, and Equity in Online Instruction

Kimberly Shotick

Introduction

Online learning is increasingly an integral component of library instruction programs, whether to reach distance learners or to supplement in-person instruction. The online format provides unique opportunities for the design and delivery of both synchronous and asynchronous library instruction. However, taking advantage of those opportunities requires a disposition toward accessibility and knowledge of relevant tools and guidelines. Increasingly, accessibility is discussed with diversity, equity, and inclusion. Inaccessible instruction does not serve the needs of diverse learners, does not create equity in education, and is not inclusive of all learners. However, the Universal Design for Learning (UDL) framework that underpins much of accessibility-minded educators’ instructional design does not go far enough to be inclusive or embrace diversity in support of all learners.¹ In fact, as of this writing, CAST, the organization responsible for the UDL framework, is actively revising the framework to “[address] systemic barriers that result in inequitable learning opportunities and outcomes”² via their initiative, UDL Rising to Equity. These systematic barriers manifest in the classroom, and while they need to be addressed at the systematic level, the individual educator can make informed choices to not only foster accessibility but equity and inclusion as well.

This chapter focuses on designing online instruction under the UDL framework in support of accessibility, equity, and inclusion. These are not buzzwords—they have real
implications and can be exercised through intentional instructional design. This work is anti-racism put into practice in the (virtual) classroom. This chapter breaks down the UDL framework into application of its parts as it relates to accessibility, equity, and inclusion. After a brief overview of the ideas, each UDL guideline is defined, illustrated with examples from academic libraries, and explicitly addressed in terms of accessibility, equity, and inclusion. Finally, I discuss assessment methods you can utilize to ensure you are meeting instructional goals as they relate to UDL guidelines. Not only will you be able to articulate the impact of designing online instruction on accessibility, equity, and inclusion to stakeholders, but you will also be able to apply the concepts to your own work in pursuit of education for all. After all, as said by Andratesha Fitzgerald, educator and author of the CAST book *Antiracism and Universal Design for Learning: Building Expressways to Success*, “The work of a revolutionary antiracist—ignited by the need for change and the body of research that points to what is possible—is burning hot with the passion to reach all students.”

**Recommendations on How to Read This Chapter**

Short on time? Read the introduction and the summaries, then use the storyboard in the assessment section to design your instruction.

Already familiar with the UDL Framework? Read the introduction, section examples, and assessment section.

New to these concepts? Read the introduction and the summaries first, then read each section.

**Definitions**

*Online instruction* comes in many formats and can serve very different purposes. Each platform presents unique opportunities and challenges. For instance, Blackboard Collaborate interfaces with other Blackboard applications and hierarchies, such as groups. However, a university committee I serve on in support of persons with disabilities prefers Zoom’s ability to have a sign language interpreter pinned for viewers.

*Asynchronous instruction* generally consists of the use of learning objects. The use of online learning objects, such as tutorials embedded in an LMS or how-to LibGuides, has enabled librarians to keep teaching during pandemic lockdowns and will continue to be an important feature of library instruction beyond the pandemic era. Here, too, the tools and their respective advantages vary. There is no “best” tool for creating and distributing online learning objects—the local needs and available resources will all impact fit and so there is no one-size-fits-all. What will follow is an explanation of the guidelines with examples that use a variety of tools for both synchronous and asynchronous instruction. In many instances, application of a guideline will be possible regardless of the tool.
Synchronous instruction in the online setting is instruction that takes place in real time. Generally, a videoconferencing platform, such as Zoom or those built into an LMS such as Blackboard Collaborate, is used to connect students with an educator. The delivery of synchronous instruction varies widely, from a live reading of a PowerPoint lecture to a flipped classroom model where students engage in group work to apply concepts—and everything in-between.

Accessibility, in terms of online instruction, refers to the characteristics of the instruction that allow or disallow students to engage with and receive instruction. Accessibility is a legal requirement. The Americans with Disabilities Act (ADA) and Sections 504 and 508 of the Rehabilitation Act of 1973 compel educators to make their instructional materials accessible, including online content. The standard for web accessibility is WCAG 2.0 AA, a set of web accessibility standards created by the World Wide Web Consortium (W3C) Web Accessibility Initiative (WAI).

Equity in the context of education can be summed up as giving everyone what they need to succeed. Equity is distinct from equality, as what one person needs to succeed may differ from another. This is especially true when considering the systematic racism that purposefully excluded Black and Brown children from education and has incarcerated them at much higher rates than white children. The cards have been stacked against Black, Indigenous, and People of Color (BIPOC) individuals on purpose, and as a society we need to reckon with racial injustice, and as educators we need to understand this in the design and delivery of our instruction. When I write in this chapter to you, I’m not just writing to white educators but to everyone who participates in traditional systems of education underpinned by white supremacy. However, as a white educator raised in an era of color-blind ideology, I’m aware that my white colleagues and I are less attuned to the systems that benefit us and continue to disadvantage BIPOC individuals.

Inclusivity is a component of accessibility and equity in education because our education is neither accessible nor equitable if we are not designing it to include all learners. Inclusivity is tied closely to belonging. Do all your learners feel like they belong in your classroom, online session, or whatever virtual space you have created for them?

Why focus on accessibility, equity, and inclusion?

Higher Education has increasingly focused on inclusion and equity—it is not only a matter of doing what is right, but it is a necessary strategy for survival, as institutions of learning become increasingly diverse. However, these institutions were built on the backbone of white supremacy, and outcomes have reflected this. The Center for Urban Education founder argued “that it is whiteness—not the achievement gap—that produces and sustains racial inequality in higher education.” Centering education on whiteness leads not only to racial inequities but also inequities across all kinds of differences, from physical ability to age, gender, immigration status, and even body size. For example, in a case study on the group dynamics of a graduate class, the researcher observed how whiteness operated as a dominating and othering factor in the classroom, depriving the Asian international students of the resources of time and teacher attention while marking their perspectives as irrelevant, thus silencing them. In the case study, the white students directed most of the questioning during a lecture, which was the only option for
participating in the instruction for that class. Later, when an Asian international student does make a motion, indicating that she has a question, it is assumed that a white student had made the motion, further excluding the Asian international students. UDL, while not the only solution required to address the inequities of education, provides us a tangible opportunity to begin to recenter education and rebuild the systems that lead to (and sustain) inequality. After all, “Systems are doing exactly what they were designed to do—allow white privileged students to succeed and move ahead while others are held back. UDL requires us to do better….”

White supremacy in online education has also produced inequitable outcomes for students with diverse identities and/or characteristics. The American Library Association (ALA) defines equity as an “assumption of differences” and equity in action as “take[ing] those differences into account….” Here, UDL and ALA have a commonality: intentional design for those with differences for the benefit of all. While the UDL guidelines don’t explicitly mention racism in education, they do give pathways to working against it. The guidelines can be viewed through an antiracist lens and implemented as such, especially when combined with antiracist pedagogy, such as Culturally Sustaining Pedagogy, an educational theory that reimagines education as a site for holding up and honoring diverse cultures. This chapter does just that: offers concrete UDL practices through an antiracist lens in support of students who have been left behind by an education system that wasn’t built for them. While change needs to happen at systemic levels, we must acknowledge and harness the power we do have, even if our time with students is brief.

**Applying the UDL Framework**

The following sections define each of the three UDL guidelines, offer application ideas for online instruction through an equity and inclusion lens, provide a bulleted summary, and give a case study generously shared by an academic librarian. What you won’t find is a detailed description of each checkpoint nestled within the guidelines. For a fuller explanation of the guidelines, visit CAST’s website, which goes into further detail on each guideline: https://udlguidelines.cast.org/.

**Engagement**

The first UDL principle, providing multiple means of engagement, refers to the way in which we allow our learners to choose interactions that promote their interest, persistence, and self-regulation. Learner motivation is varied because learners are varied. Each one of us is unique, since not only are our brains “wired” differently due to the DNA we inherited, but we are also shaped by our experiences in life. What engages me because of my brain chemistry and my unique cultural and personal experiences may not engage my neighbor. My neighbor may suffer, then, from a lack of interest in situations where I thrive. When we set up learning so that there is something engaging and motivating for me and

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*I first encountered the concept of Culturally Sustaining Pedagogy in the webinar “Towards a Future of Culturally Sustaining Pedagogies” by Sofia Leung and Jorge López-McKnight as a part of the University of New Mexico’s Marjorie Whetstone Ashton Speaker Series on March 22nd, 2022.*
something that is engaging and motivating for my neighbor, we both thrive, and not at the cost of one another. Antiracist pedagogy acknowledges that the default audience in higher education has been white, English-speaking, heteronormative, and seeks to recruit the interest of those outside of this default. By de-centering whiteness in education, we can shift away from a default that perpetuates inequality.

Guideline 7 of the engagement principle is about recruiting the interest of learners. This guideline asserts that accessible learning must be interesting to learners. When considering inclusivity and equity in terms of recruiting interest, we must recruit the interest of all learners—that can mean taking a hard look at where your examples or methods of engagement are centered. Do they center on a white, cis-gendered learner, as academia historically has?

The three checkpoints within this guideline give us pathways to increase interest: optimize individual choice and autonomy; optimize relevance, value, and authenticity; and minimize threats and distractions. Online learning is particularly suited to the first two checkpoints if the educator is mindful to take advantage of the online setting in support of these checkpoints. For instance, learning modules may give students options for engaging with the content. A “choose your own adventure” style module might have three options for the same content: watch this interactive video, read this text and answer questions, or listen to this podcast and produce a response.

The second checkpoint—optimize relevance, value, and authenticity—requires us to design instruction that is relevant to all learners by offering instruction that is culturally relevant and draws on the student's own cultural wealth. Drawing on students' cultural wealth fosters collaboration and community and grows multiculturalism where all students learn the cultures of one another. In an online setting, this can look like asking students to work in a group and describe who they, in their culture and personal experiences, consult as experts when trying to learn something new. In this example, students are not only engaged by talking about their own experiences, but we can engage in critical information literacy together in a way that honors multiple ways of being. This can be done in an online discussion group (for asynchronous instruction) or in breakout rooms (for synchronous instruction).

Once we've recruited learner interest by offering choices and honoring their experiences, we must help them manage distractions. Minimizing threats and distractions can be difficult when the threats and distractions are completely outside of our control. However, we can offer students comfortable, safe spaces to engage in work (such as a library—yours, or their local library, for distance learners). Assuming students have a private, quiet space in their home to meet with you synchronously or to focus on your asynchronous content is a privileged assumption. I've taught students who were homeless, hungry, sick, grieving—we likely all have; these statuses are not uncommon. Minimizing these types of threats and distractions primarily happens at the structural level, but you can and should not only remind students that food, shelter, and safety are essential to their learning but also offer them resources they can access to get those basic needs met (whether that is through a food pantry, shelter, or a third place, such as a library, where they can rent a room or find a quiet corner at no cost).
Once you’ve successfully recruited their interest in ways that make the learning relevant and valuable, you must sustain their interest. The three checkpoints within this guideline give us pathways to sustaining effort and persistence: heighten salience of goals and objectives, vary demands and resources to optimize challenge, foster collaboration and community, and increase mastery-oriented feedback. In any learning environment, goals should be clearly communicated to students. I recall a time that I was teaching a financial literacy lesson and I had forgotten to articulate the big picture goal, yet I expected the students to create their own individualized goals. “But why are we doing this?” a brave student asked. I had either failed to communicate the goal in a way that was meaningful to all my students or I had failed to communicate it at all. Either way, I was thankful for the student’s question and quickly addressed the immediate and long-term goals. Online learning modules should clearly state the learning goals in a way that is meaningful and motivating to students. For example, “This module will help you better understand how to evaluate information that you find online so that you can choose better sources for your paper (and get a better grade) but also so that you can make better information choices for your personal use.”

In addition to explicitly stating goals, offering a choice of difficulty based on prior experience meets our students where they are. Designing that way lets the student try something, like identify keywords from a research topic, and then allows the student to adjust the level that meets this guideline. Language learning apps do this well. Popular apps, such as Duolingo, have built-in artificial intelligence that adjusts the instruction based on performance while encouraging the learner based on what they are doing well. Additionally, providing feedback is another difficult checkpoint to operationalize in the online setting, especially for one-shot type instruction. However, building in tools such as low- or no-stake quizzes that offer constructive feedback is one way to address this need.

Providing students with a variety of tools for self-regulation is another important aspect of the Engagement guideline. The checkpoints 9.1 (promote expectations and beliefs that optimize motivation) and 9.2 (facilitate personal coping skills and strategies) relate to affective tools we can provide our students to support their learning instead of perpetuating the messages of deficit thinking common in education that alienate students. The deficit thinking model characterizes students who do not perform well as lacking instead of recognizing that it is our education system that needs fixing. Remedial courses, for example, offer to “correct” students, many of whom were under-resourced in the K-12 setting. When considering that white students have taken remedial courses at the lowest rate of all other races, it is easy to see that not only is education failing BIPOC students but also that the students are given the message: you do not belong here. This type of framing and lack of addressing the real issue (the education system) de-motives and deflates students, ensuring that the prophecy of the educator comes true. In fact, just the opposite can have incredible benefits to motivation, resulting in higher achievement. Exercises that help learners affirm their sense of self and value have positive impacts on their learning, even without changing anything else in the instruction. The affective network, which deals with priorities, motivation, and
engagement, can clearly have a powerful impact on learners if harnessed with intention toward inclusion.

The three checkpoints within this guideline give us pathways to promote self-regulation: promote expectations and beliefs that optimize motivation, facilitate personal coping skills and strategies, and develop self-assessment and reflection.\(^{14}\) In online learning, it isn’t always obvious to address this dimension of the affective network because we can’t always see the motivation and coping skills in action (or lack thereof). In a physical classroom, I can see the student who appears to be struggling with motivation yawning in the corner and adjust my methods to better engage them. However, these checkpoints are well-suited to be incorporated into information literacy programs. The *Framework for Information Literacy for Higher Education* describes dispositions of “learners who are developing their information literate abilities”\(^{15}\) throughout the framework. These dispositions are often situated in the affective network and relate to the idea of self-regulation. For example, in the Authority Is Constructed and Contextual frame, learners “motivate themselves to find authoritative sources” and have “a self-awareness of their own biases and worldview.”\(^{16}\) These dispositions map perfectly to the UDL self-regulation checkpoints of *optimizing motivation* and *developing self-assessment and reflection*. The Framework is full of these dispositions, so instruction that is mapped closely to the Framework is likely to address these checkpoints in some way. One example of how to address this guideline is to prompt students to identify aspects of their identity that might impact their worldview. Students could engage in a reflective prompt through a discussion board or as a text entry or multimedia response to a module prompt.

**Example**

In this example, Academic Services Librarian Mercedes Rutherford-Patten and Course Reserves & Circulation Desk Coordinator Caleb Nichols at California Polytechnic State University, San Luis Obispo, shared their Research Ethics tutorial. The tutorial’s focus is on ethos and types of bias in research. It is embedded within a larger Canvas LMS module for library research that introduces students to foundational information literacy skills.

The tutorial meets several UDL guidelines, including those that come later in this chapter. For engagement, however, the tutorial allows the user to engage in optional, reflective activities, such as taking an Implicit Association Test in a section on biases.

This example illustrates a few components of the engagement guideline. First of all, it allows the student to engage with the content in multiple ways: via a transcript, a video, and/or by taking a quiz. The activity is also reflective and allows for personal choice. Project Implicit offers fifteen different Implicit Association Tests for the user to identify their own biases in areas including age, disability, race, weight, and more. By offering choice in several areas including content format, bias, and even the choice to engage in the content at all, learner attention can be attracted and sustained across a diversity of experiences and identities.
Figure 8.1. Screenshot from the module with the heading “Optional Activity: Identify Your Implicit Biases,” by Mercedes Rutherford-Patten and Caleb Nichols.

Offer accessible, varied choices that are relevant to the diverse cultures you serve

- Draw upon the students’ cultural wealth
- Offer resources to minimize threats and distractions

To Sustain Learner Effort & Persistence

- Explicitly state the learning goals in a meaningful way
- Allow for a variety of difficulty
- Provide feedback

To Promote Learner Self-Regulation

- Encourage affirmations
- Offer coping strategies related to the work
- Incorporate self reflection

Figure 8.2. Summary of the UDL engagement dimension.
Representation

Student diversity is reflected in many dimensions: age, background, interests, race, gender identity, and more. However, we often teach students how to fit into a white, heteronormative mold that not only doesn’t reflect the whole of who we are teaching, but it also hurts those that differ from that mold. By offering our students a multiplicity of examples and formats, we are much more likely to meet their accessibility needs, make them feel welcome, and affirm their way of knowing and being as good.

The three guidelines in this principle relate to (1) perception, (2) language and symbols, and (3) comprehension. These guidelines are common best practices in online education and are well-documented in the literature. The principle recommends variation in the way that information is presented and student choice regarding how they interact with it. We can provide learners with multiple formats and allow for customization using an online format. The clearest application is providing the same content in multiple ways. In a learning module, repeating a video’s content with bullet points and graphic organizers is more work upfront in the design phase, but pays off in learner outcomes and a reduced need to intervene. Why wait for a student to ask for more explanation or another example, if we are lucky enough to get such feedback? Provide the options from the start. If we can use a tool such as YouTube or Kaltura for hosting videos, they have some built-in options for customization. In Kaltura, for example, learners can translate captions to another language, move the captions around, and even change their size and color. Kaltura also has the feature of allowing users to slow down or speed up the video. W3C has a checklist to consider when making multimedia content to make sure that your video and audio content is accessible: https://www.w3.org/WAI/media/av/planning/#checklist.

Despite this guideline’s focus on variation, it leaves out areas where we can be intentionally inclusive. Of all the guidelines, Representation has the most potential for educators to activate antiracist pedagogies, such as Culturally Sustaining Pedagogy, which can help reshape higher education as a place where all are welcomed and valued. However, as Amanda Roth, Gayatri Singh (posthumously), and Dominique Turnbow pointed out in their article “Equitable but Not Diverse: Universal Design for Learning Is Not Enough,” UDL is currently missing the explicit call for intentional representation of diverse identities. For that reason, I’ve added a fourth guideline to this principle: To Provide Diverse Representation. We can provide examples and texts from a variety of cultures and identities, and our graphics should represent many ways bodies can be. Roth, Singh, and Turnbow, for example, offered characters with racial diversity in their tutorials and found that students not only noticed the diverse variety of characters but also overwhelmingly preferred that diversity. The simple design choice to include characters of different ages, skin tones, and body types is one way to be more inclusive.

Culturally Sustaining Pedagogy asks us to not only represent a variety of ways of being but to also sustain them. This requires that we as educators get to know their communities and explore the cultures and customs of the many students we serve. When the default examples and icons are no longer rooted in whiteness, we can begin to decolonialize education spaces and truly embrace education as a site of cultural pluralism that can enact social transformation towards equity and inclusion.
Figure 8.3. Screenshot of two sections of the Library Guides by Marisha C. Kelly.

To Provide Options for Perception
- Offer multiple formats for the same information
- Allow user choice/customization when possible

To Provide Options for Language and Symbols
- Vary the use of symbols and language to convey information
- Allow for language customization when possible

To Provide Options for Comprehension
- Highlight main points/big ideas
- Activate their prior knowledge through examples rooted in a variety of backgrounds

Provide Diverse Representation
- Represent multiple identities in graphics
- Honor identities through examples rooted in a variety of backgrounds

Figure 8.4. Summary of the UDL representation dimension.
Example
In this example, Marisha C. Kelly, reference and instruction librarian at Northcentral University, provided a training program for the reference management tool RefWorks. Prior to the creation of the training program, some asynchronous options like the RefWorks Library Guide and general training videos from the vendor were previously available to students; however, Kelly found that the vendor resources were not enough to support the individualized and diverse learning needs of their users. Kelly’s program included synchronous training options, including weekly workshops, one-on-one appointments, live help support through phone and chat reference, and virtual study halls. In addition to the synchronous instruction and support, asynchronous instruction included video tutorials, library guides, and an FAQ knowledge base.

Kelly’s RefWorks instruction was diverse in that learners could choose from a wide variety of modes of instruction (in-person workshops, online guides, or video tutorials, for example). By offering learners a suite of tools customized for their populations, Kelly was essentially giving the learners the whole toolbox. Creating multiple formats and modes of instruction may seem daunting, but the time is generally concentrated upfront, and the reward is reaching the most students and their individualized needs.

For more information about the training program, see Kelly’s poster, presented at the Transforming Libraries to Serve Graduate Students virtual conference in March 2022: https://digitalcommons.kennesaw.edu/gradlibconf/2022/Posters/4/.

Action and Expression
Action and expression is the final principle. This principle argues that learners must be able to demonstrate their learning in meaningful ways. Within the principle are guidelines for physical action, expression and communication, and executive functions.

Online content must first meet accessibility requirements but must also go beyond those requirements to be truly accessible and inclusive of all learners. Physical action in the online setting refers to how users navigate and interact with the content online. For example, content must be accessible to screen-reading devices, such as JAWS or NVDA, which is a baseline accessibility requirement. Beyond that, consider how users could navigate through content without a mouse (using keyboard shortcuts, for example) or on a variety of devices, such as a phone. Content that is only accessible via a personal computer is not truly accessible to everyone. In the past year, over 10 percent of Northern Illinois University Libraries’ YouTube tutorial views came from mobile phones. YouTube uses HTML5 and can play videos smoothly on lower bandwidths across many different platforms. This type of consideration may require some technical knowledge, but it is essential to be sure that online content works for the learner regardless of their device or internet speed.

Just as it is important for the technology to provide options to the learners to meet their needs, we should present content options for the learner to be able to communicate with or respond to online learning objects. For instance, if given a final assessment after a series of modules, we can offer learners a choice for their response format. Online tools, such as VoiceThread, may allow the learner to choose how to respond to a question, for example, by recording audio, typing a response, or inserting pictures. Without such a
tool, however, we can still allow for choice. For example, if working synchronously with students, we could ask students to respond to an “exit ticket” that is either a three-sentence summary about the research process, a meme that represents the research process, or a link to a video or song about the research process. We could post them on a shared space, such as a Jamboard or Padlet, or simply emailed or messaged to us. When this type of hands-on assessment is too difficult to scale to large classes or courses with many sections, we can work with the course’s instructor in designing a flexible assessment that the instructor grades. There are many opportunities to offer choice, and doing so not only leads to more inclusive teaching but also to more interesting and creative work from learners.  

Finally, providing options for executive functions gives learners the tools they need to comprehend the material by dealing with our executive functions appropriately. Executive functions allow us to control the short-term impulses that come up and focus on the task at hand. If we think of the brain like a car driving through a busy city street, we can imagine the many obstacles: pedestrians, other cars, cyclists, stop signs and stop lights. Perhaps this is a street that we grew up traveling and we get all the green lights. Not so hard. Imagine, though, we’re driving in a different country and don’t know what the signs mean, and pedestrians jump out randomly. Scenario one is easy, but the second? Nearly impossible. Learners may or may not be familiar with the material, mode of instruction, unspoken expectations of the classroom, and technologies used. Learners may have been given advantages, as in the first scenario, or may be disadvantaged by the scenario placed in front of them. To equalize the playing field, we must consider equitability—and that means focusing on the learners for whom the “traditional” route doesn’t work and building tools to help the learner reach their goal. Thinking about executive function, distractions come in many packages. Giving learners tools so that they can scaffold the instruction is one tool that we can utilize to keep all learners on track. For example, checklists before and/or after the content can help remind the learner of the goal (think: signs saying, “this way!”) as well as make sure that they are ready to move on. Creating these little stops on their journey can not only build confidence but it can also allow learners to regulate their own learning. Also, adding progress cues, such as numbering modules and/or providing a progress bar, allows learners to monitor their own learning. This can be extremely important for learners who have time constraints, such as families and jobs that require their time. Fitting in 2/10 sections of a learning module between obligations seems much more possible than engaging in content of unknown size. For this reason, the modules that students of English composition take at Northern Illinois University are chunked up into several units that always begin with instructions on how to complete the module and an outline of content.

Example

In this example, Kelly Blanchat, undergraduate teaching and outreach librarian at Yale University Library, created an online worksheet that guides students through various library research processes and facilitates analysis of research concepts. The form includes logic that branches off students who are having trouble into pages with support, such as a video tutorial reinforcing the concepts or processes needed to continue. The worksheet then guides the students through the process of drafting a research question, generating keywords, and conducting an advanced search for articles.
Blanchat uses the worksheet prior to both in-person and synchronous instruction in a flipped classroom model. For the “live” instructional portion, Blanchat guides the students through another worksheet with their article citations from the first worksheet they completed prior to class and facilitates their deeper thinking about information literacy concepts which they discuss as a group.

Throughout her interactive worksheet (built using a Google Form) Blanchat offers options for navigating the content (such as giving a direct link for a YouTube video in case the embedded video is too small on their device) and provides options for scaffolding using form logic to supplement the instructional content when it is needed. Also, the worksheet supports effective executive functioning by allowing the user to process one piece of information at a time and use the back button to reference previous material. The student’s responses are sent to them at the end of the session.

To see Blanchat’s full worksheets and instructional material, visit: https://drive.google.com/drive/folders/1LOCNa2KY5WhcGjLPFG2kq2Q4HSs0-Svv.

**Figure 8.5.** Screenshot of two sections from the interactive worksheet by Kelly Marie Blanchat, undergraduate teaching and outreach librarian at Yale University Library.
Assessing Your Accessibility Efforts

It can be overwhelming to try and implement new guidelines across your instructional design, especially if you have been teaching one way for a while. You can begin with small changes within your existing plans, however. Begin by assessing how accessible, equitable, and inclusive your teaching is, and either (1) find the place that needs the most attention or (2) find a solution that is the easiest to implement to get you started. You may learn that some of the smallest changes make the biggest impacts.

There are a variety of tools available to help you design accessible and inclusive learning. These tools are either freely available or are available via an LMS, natively or as add-ins. While not exhaustive, some of the major tools used in education are described below.

Blackboard Ally. Blackboard Ally is a paid tool that can be used as a standalone tool for websites or embedded in any LMS, not just Blackboard. It not only identifies accessibility issues, it also translates files into a variety of accessible formats and provides institutional reporting on accessibility. For more information on using Blackboard for LMS, visit [https://www.blackboard.com/teaching-learning/accessibility-universal-design/blackboard-ally-lms](https://www.blackboard.com/teaching-learning/accessibility-universal-design/blackboard-ally-lms).

NVDA. NVDA is free, open-source screen-reading software. If you are sighted, you may want to download the software to test navigation of your online content via a screen reader. However, be mindful that a sighted person’s experience with screen readers will be different from that of regular users who may be savvy at navigating websites with the software. The software may be downloaded for free at: [https://www.nvaccess.org/download/](https://www.nvaccess.org/download/).

UDOIT for Canvas. Universal Design Online Content Inspection Tool (UDOIT) was created by the Center for Distributed Learning (CDL) at the University of Central
Florida (UCF). UDOIT is a tool that checks Canvas courses for accessibility. Although it was created for faculty at UCF, the program is open source, and the code can be downloaded from their GitHub page. For more information, visit https://cdl.ucf.edu/teach/accessibility/udoit/.

WAVE tool. The Web Accessibility Evaluation Tool (WAVE) does just that: evaluates the accessibility of websites. This free tool looks for WCAG errors and facilitates human evaluation of the issues, along with information to further educate the evaluator. For more information and to use this free tool, visit https://wave.webaim.org/.

The following worksheet can help you plan a lesson or module using UDL strategies.

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<th>Lesson or Module Name/Number:</th>
<th>Description/Information</th>
<th>Additional format</th>
<th>UDL Strategy</th>
<th>Accessibility and Equity Consideration</th>
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<td>Readings</td>
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<td>Engagement: Diverse Representation:</td>
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<tr>
<td>Activity</td>
<td>Engagement: Diverse Representation:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Additional Resources/Supporting Materials</td>
<td>Engagement: Diverse Representation:</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The following chart is a summary of some of the implementation ideas mentioned in this chapter. This is merely a sampling of ideas to hopefully spark ideas for how you can apply UDL concepts (with a Culturally Sustaining Pedagogies twist) in your own teaching.

* This worksheet is a modified version of a worksheet created by Stephanie DeSpain, assistant professor in early childhood education at Northern Illinois University, which she generously shared with me and gave me permission to edit and reproduce it here.
<table>
<thead>
<tr>
<th>Method</th>
<th>Engagement</th>
<th>Representation</th>
<th>Action and Expression</th>
<th>Asynchronous</th>
<th>Synchronous</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explicitly state module objectives.</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Use discussion boards and have peers respond to one another.</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Offer students a choice of activities or modules that have the same learning outcomes.</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Have students write about their prior knowledge.</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Ask for (and use) students’ names, pronunciations, and pronouns.</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Provide resources for students with a variety of needs (where to check out a laptop, how to access WiFi, quiet or collaborative places to study).</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Offer the same content in multiple formats (html text, image with alt text, captioned video).</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Provide a glossary defining terms such as “database” and “keyword”.</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Provide graphics that represent a variety of identities (and describe them accordingly using alt text).</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Include critical information literacy framing and allow for student reflection—for example, asking them to explore their own information privilege before introducing databases.</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>
Use low- or no-stake quizzes with immediate feedback to let students check their understanding.

Use symbols, bullet points, and other cues to highlight important points.

Allow student choice in assessment activities—for example, they can write a short response or take a short quiz.

Provide affirmations to sustain student motivation.

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<td>Use low- or no-stake quizzes with immediate feedback to let students check their understanding.</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
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<tr>
<td>Use symbols, bullet points, and other cues to highlight important points.</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Allow student choice in assessment activities—for example, they can write a short response or take a short quiz.</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Provide affirmations to sustain student motivation.</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

**Conclusion**

Integrating the UDL principles into online instruction is not just about making learning more accessible to individuals with disabilities, it encourages inclusion of all learners and allows education to be more equitable. Combining UDL principles within a framework of antiracist pedagogy, such as Culturally Sustaining Pedagogy, instructional design can break from the excluding practices that are baked into systems of education and truly be inclusive of all learners.

**Notes**

14. Ibid.
17. Ibid.
18. Roth, Singh, and Turnbow, “Equitable but Not Diverse.”

Bibliography