

Inclusive Teaching Strategies in a Large Enrollment Disability Studies Course

Lieke van Heumen, PhD & Nell Koneczny, BA

Department of Disability and Human Development

University of Illinois at Chicago

Authors Note

Lieke van Heumen, PhD & Nell Koneczny, BA, University of Illinois at Chicago.

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Correspondence regarding this article should be addressed to Dr. Lieke van Heumen, Department of Disability and Human Development, University of Illinois at Chicago, 1640 West Roosevelt

Road room 711, Chicago, IL, 60608, (312) 413-5557, lvheumen@uic.edu.

Abstract

Disability studies aims to promote radical knowledge, activism, and practice in relation to disability. This paper explores teaching strategies developed and employed by an Instructional Team in a large enrollment (170 students) introductory disability studies course at a large, urban, public research university. The teaching strategies explored in this paper align with principles of Universal Design for Learning, a type of design used to create learning spaces that are as accessible as possible. These strategies promote accessibility and flexibility in the course to meet the learning needs of a variety of students, including disabled students. The examples of the teaching strategies are divided into two categories: student-centered teaching practices and assessments. The first category includes the following examples: establishing the classroom environment, the development of course materials, in-lecture practices (the use of lecture capture, which is any technology that allows instructors to record their lectures and make them available online; lecture question forms; and brain breaks), flexible office hours, and extra credit. The second category includes the following examples related to assessment: participation, quizzes, reading engagement, and grading plans.

Student feedback on these strategies gathered through two anonymous online surveys is included in the paper to illustrate students' experience and satisfaction with the strategies. This paper concludes with a brief discussion of the lessons learned by the Instructional Team while developing, implementing, and reviewing the flexible and accessible teaching strategies of this course. Additionally, next steps in the course are explored and the authors briefly review the future direction of teaching large enrollment courses in disability studies.

Keywords: large-enrollment courses, design for learning, teaching strategies, accessibility

Inclusive Teaching Strategies in a Large Enrollment Disability Studies Course

This paper provides examples and discussion of teaching strategies developed by an Instructional Team of a large enrollment (170 students) introductory disability studies course in a large, urban, public research university. These strategies promote flexibility and other accessible practices to improve student learning and satisfaction. The examples are divided into two categories: student-centered teaching practices and assessments.

The course has been taught in its current format for three semesters: the fall 2017, the spring 2018, and the fall 2018 semester. The Instructional Team solicited feedback from students on the course's teaching strategies through two anonymous surveys on the Blackboard Learn (2019) platform during the fall 2018 semester. One hundred-forty-nine students completed a survey in the middle of the semester (88% response rate), and 140 students completed a survey at the end of the semester (82% response rate). Students received extra credit after completing the surveys. The first survey had an additional extra credit incentive incorporated so that students would receive additional extra credit if the response rate would reach 90%, which it did not. The surveys consisted of both multiple choice and open-ended questions. Examples of survey questions include:

- “How do you feel about videos in lecture?”
- “Do you have any specific comments about lecture?”
- “How do you feel about the Friday discussion slides?”
- “If you have experienced access issues in the course, please describe them below.”

The authors incorporate student feedback in this paper to illustrate student experiences with the use of the strategies introduced below. Student comments are shared verbatim. Since this paper was a course evaluation project, it received a formal Determination of Quality Improvement

status according to University institutional policy. As such, this initiative was deemed not human subjects research and was therefore not reviewed by the Institutional Review Board.

Background

Large Enrollment Courses

Many U.S. universities offer classes that serve large numbers of students at once. Large enrollment classes are usually undergraduate level courses that provide students with a foundational level of study within a particular discipline. Additionally, these courses aim to assist students in the development of the skills they need to continue to learn beyond their first year of being enrolled in college. There is no clear definition of what a large enrollment class is. Research tends to report on classes with more than 100 students. However, there is more to the definition of a large enrollment class than the number of students in the class. A large enrollment class may be defined more accurately by the threshold where challenges arise with providing equal and quality learning opportunities to all the students in the course (Maringe & Sing, 2014).

The number of large enrollment courses has increased over the last two decades, which has led to increased research and discussion on the impact of large enrollment courses on student learning (Arvanitakis, 2014; Cash, Letargo, Graether, & Jacobs, 2017; Hornsby & Osman, 2014; Mulryan-Kyne, 2010). Literature has identified that large enrollment courses present more challenges and drawbacks than opportunities (Maringe & Sing, 2014; Neustifter, Kukkonen, Coulter, & Landry, 2016).

Many students find learning in large classes difficult and dissatisfying (Bligh, 2002; Carbone & Greenberg, 1998). Poor learning outcomes have been documented due to the difficulty of incorporating student-centered teaching in large enrollment classes. Students in small enrollment classes tend to outperform those in large enrollment classes (Bandiera,

Larcinese, & Rasul, 2010; Maringe & Sing, 2014). Students in large enrollment classes have also been found to learn at lower levels of abstraction compared to smaller enrollment classes, mostly at the level of information recall as opposed to comprehension and analysis of course material (Fischer & Grant, 1983). Furthermore, the likelihood of students in large enrollment classes receiving less personalized feedback can cause poor performance (Tinto, 1993). Finally, assessment through multiple choice testing is preferred in large enrollment classes (Smith et al., 2005), a strategy that has been found to be less beneficial to student learning compared to essay writing (Maringe & Sing, 2014). There are also indications that students are less likely to engage in large enrollment classes (Maringe & Sing, 2014). These classes lead to fewer opportunities for students to develop their communication skills (Benton & Pallett, 2013). Students might hesitate to ask questions in a classroom with many other students (Stones, 1969).

One opportunity found in large enrollment classes discussed in the literature includes more students having access to content experts and knowledge that is unavailable through the use of text alone (Mulryan-Kyne, 2010). Most available literature has reviewed the impact of large enrollment classes on the learning of students in natural sciences. The impact on student learning in other disciplinary fields, including disability studies, is less clear.

Disability studies is the global phenomenon that aims to promote radical knowledge, activism, and practice in relation to disability (Barnes, Oliver, & Barton, 2002) and is both an academic field of inquiry and an area of political activity (Davis, 2006). Within teaching disability studies, large enrollment courses can provide instructors the opportunity to teach disciplinary concepts to a larger number of students. This is important considering the minimal number of disability studies programs available to undergraduate students in the United States. During the 2014-15 academic year, there were 3,011 four-year colleges within the United States

(National Center for Education Statistics, 2019). The disability studies program at Syracuse University identifies only 30 four-year colleges and universities in the United States with some form of a disability studies academic program available to undergraduate students specifically (Disability Studies, Syracuse University, 2016). This means only 1% of four-year degree-granting institutions in the United States offer programs in disability studies to college students. Researchers have yet to fully examine how students in disability studies courses impact their communities with new perspectives on disability. However, the larger the number of students who learn about disability history, community, culture, and empowerment, the larger the impact of this knowledge on communities is likely to be. In the still-growing field of disability studies, this potential ripple effect is important.

Responding to Challenges of Large Enrollment Classes

Researchers and instructors have developed and used teaching methods that create more engaging, student-centered large enrollment classes to mitigate some of their challenges and improve student satisfaction and learning outcomes. In general, large enrollment classes that enact active learning strategies see improvement in student success (Carloye, 2017; Cravener, 1997; Daniel, 2016; -May, Brewer, & Allred, 1997; Lambach, Kärger, & Goerres, 2017; Lund Dean & Wright, 2017; Smith et al., 2005; Stoerger & Krieger, 2016). Large enrollment classes that use cooperative learning strategies, team-based learning, interactive teaching techniques and in-lecture activities, flipped classrooms, more technology during class such as handheld technology in the classroom and online communication tools, and increase student choice ensure that students have more opportunities to engage with course material in ways that meet their learning needs (Deslauriers, Schelew, & Wieman, 2011; Eichler & Peeples, 2016; Emerson, English, & McGoldrick, 2018; Gauci, Dantas, Williams, & Kemm, 2009; Hurney, 2012; Kibble,

Bellew, Asmar, & Barkley, 2016; Mooring, Mitchell, & Burrows, 2016; Moravec, Williams, Aguilar-Roca, & O'Dowd, 2010; Neustifter et al., 2016; Oliver, 2008; Rodriguez, 2016; Van Daele, Frijns, & Lievens, 2017).

Universal Design and Broad Accessibility

Disabled people are often (though not always) systematically disabled by environments and attitudes that create barriers to full inclusion and participation (Shakespeare, 2006). In order to gain equal opportunities, they advocate for improved accessibility and the removal of any physical or other barriers. The concept of accessibility has most often been applied to the built environment but extends beyond physical access. Universal Design promotes universal access by constructing physical spaces that are as accessible as possible, which removes the need for individual alterations. This type of design goes beyond simply removing barriers as it constructs accessible space from the onset of the development of that space. Hamraie (2013) argued that there is a risk of compromised access for disabled people in the context of Universal Design when consequential access for other groups is prioritized. For example, curb cuts that were originally designed to serve wheelchair users have been claimed to increase accessibility for individuals pushing strollers and suitcases or riding bicycles. However, curb cuts do not always remain accessible to disabled people when they are designed too steeply or too narrow for wheelchair users.

The concept of "broad accessibility," as described by Hamraie (2013), fosters a more complex understanding of the meaning of universal design and inclusion. This concept recognizes that intersectional experiences lead to multidimensional access problems. Additionally, it acknowledges that not all human variations are viewed as belonging to the universal. Universal design that is informed by such restricting values can fall short of promoting

full access and inclusion. Broad accessibility stipulates that all bodies and minds have a stake in accessible environments, and leads to design that is as accessible as possible for as many people as possible, reinforcing collective access. This type of access ensures that disabled people can participate in spaces and activities without having to request individual accommodations (Mingus, 2010) that serve only their personal needs and do not further the inclusion of the disabled population as a whole. Creating accessible spaces includes offering multiple options for participation from which people may choose to meet their individual needs. An example of this includes providing conference attendees with the option to submit questions to speakers during a Q&A session, in a written fashion on notecards in addition to being able to ask questions verbally.

Universal Design for Learning in Large Enrollment Classes

The pedagogical framework of Universal Design for Learning (UDL) applies principles of Universal Design to educational contexts (Bernacchio & Mullen, 2007). In the United States, the Higher Education Opportunities Act of 2008 (U.S. Department of Education, 2008) defines UDL as:

a scientifically valid framework for guiding educational practice that...

- A. provides flexibility in the ways information is presented, in the ways students respond or demonstrate knowledge and skills, and in the ways students are engaged; and
- B. reduces barriers in instruction, provides appropriate accommodations, supports, and challenges, and maintains high achievement expectations for all students, including students with disabilities and students who are limited English proficient. (HEOA, section 103, (a)(1)(24))

UDL guides instructors to incorporate (1) flexibility and (2) accessible material into the design of their classrooms (Bernacchio & Mullen, 2007). Nonprofit education research and development organization CAST, founded in 1984 as the Center for Applied Special Technology, outlines the three principles of UDL, which is to provide multiple means of (1) engagement, (2) representation, (3) and action and expression for students (CAST, 2019a, 2019b). Using these principles to guide teaching, instructors should work to provide options when increasing access to learning, building student strengths, and helping students internalize their learning (CAST, 2019b). CAST provides a graphic organizer that further explains these principles and UDL guidelines.

Incorporating flexibility in the classroom means that instructors should engage students with the material through meeting their interests (e.g., relating material to students' potential careers, sharing personal stories about the material, providing real-world examples, sharing historical examples, etc.), by presenting material in multiple ways (e.g., text through slides, videos, anecdotes, academic texts, non-academic texts, guest speakers, and so forth), and by providing various options for students to demonstrate their understanding of the material (e.g., in writing, by speaking, through testing, through creative means, etc.). These examples of flexibility can more simply be understood as the "Why," the "What," and the "How" of learning (CAST, 2019b). Flexibility can both increase student trust in the instructor and nurture a community-like environment within the classroom for students and instructors alike (Bernacchio & Mullen, 2007). Flexibility can best be supported by providing more accessible materials and procedures in the classroom. When accessible materials are provided and accessible procedures are established, fewer class expectations and requirements have to be changed by the instructor to meet the needs of individual students (Bernacchio & Mullen, 2007). This also reduces the need

for students to have to advocate for their individual needs. Their energy is better spent on learning course material versus navigating a classroom that has not been designed with all students in mind. By using UDL in the design of their curriculum and incorporating options across all course learning activities and assessments, instructors ensure that the classroom environment meets the needs of a variety of students, such as those who are disabled, serve as a primary caregiver, hold jobs, or are English language learners (Izzo, 2012).

Large enrollment classes must meet the needs of a more diverse group of students than small enrollment classes, and UDL can provide an effective approach to do so, especially when instructional teams intentionally select and use instructional tools that can be enjoyed by multiple students (Dean, Lee-Post, & Hapke, 2017). The implementation of the diverse teaching strategies that are required in UDL to improve flexibility and access to course materials, such as online tools, different materials, and alternative formats, requires a large time investment from instructors (Bernacchio & Mullen, 2007). Especially in large enrollment courses, significant resources need to be dedicated to design all course elements in ways that ensure that students can learn effectively.

The Application of UDL in Teaching Disability Studies

UDL intends to meet the needs of individual students, particularly disabled students. This intention aligns with disability studies concepts that challenge society to change the environment to meet the needs of individuals instead of changing individuals to meet the requirements imposed by the environment. When disability studies courses use UDL, they model disability studies concepts in practice, even in large enrollment courses. By embedding flexibility and accessible materials into large enrollment disability studies courses, classroom environments can be established that nurture disability culture and community. This practice allows students to

personally experience aspects of disability community in the classroom instead of learning about disability through course content alone.

Teaching Strategies from a Large Enrollment Disability Studies Course

Introduction

The examples in this paper are drawn from a large enrollment course with 170 undergraduate students. The Instructional Team consists of the instructor (the first author) and five teaching assistants (one of whom is the second author of this paper). At least one teaching assistant as well as several guest presenters have identified as disabled in all three semesters the class was taught. In the course, students gain insight into disability as a historical, social, cultural, and political phenomenon in the United States. The course serves to fulfill students' general education requirement and is also a required course for students who are pursuing a Major or Minor related to disability. There are two 50-minute lectures every week by the instructor of the course. The students also register for a 50-minute discussion section in a group with 34-39 other students, which is led by a teaching assistant. The students attend classes for 15 weeks. The course is offered both in the spring and the fall semesters. The course material is divided into five units, which are three weeks each. Blackboard Learn (2019) is used as the online course platform. Students complete five different types of assessments, which include:

1. Reading engagements
2. Participation
3. Four unit quizzes
4. Final quiz
5. Three written assignments

Student-Centered Teaching Practices

The course utilizes student-centered teaching practices to offer flexibility to students and to reinforce accessible pedagogy. The student-centered teaching practices explored below include establishing the classroom environment, the development of course materials, in-lecture practices (the use of lecture capture, which is any technology that allows instructors to record their lectures and make them available online; lecture question forms; and brain breaks), lecture question forms, and Brain Breaks), flexible office hours, and extra credit.

Classroom environment.

Creating a supportive climate in the classroom increases participation (Rocca, 2010). The members of the Instructional Team cultivate a supportive climate in the classroom in various ways. They aim to provide options for students in the completion of course requirements, provide consistent reminders to students that they are always available to discuss student needs, solicit and incorporate student feedback to improve student learning and satisfaction, share personal anecdotes about their lives during lectures and discussion sections—both related and unrelated to course content—reach out to students who struggle in the course (e.g., low grades, high rates of absence, difficulty with course content, etc.) or experience hardship outside of the classroom, meet with students when they need it, respond to all student questions via email and in person, and support each other in order to operate well as a team as they serve the students. Disabled Instructional Team members and guest presenters play an important role for students by relating disability studies concepts to real world experiences through sharing their life experiences throughout the semester. Nondisabled Instructional Team members and guest presenters model disability allyship to students in the class.

Disability-friendly spaces welcome individuals to move around and provide various seating options (Salman, 2018). Within educational contexts, more classrooms are utilizing flexible seating options, and disability resource centers also adjust furniture based on student needs (Delzer, 2016; Hoyler, 2018; University of Washington, 2019). While the ability of instructors to offer different seating options in large lecture classrooms is mostly limited, the Instructional Team requests additional folding chairs and tables to be placed at the top of the lecture hall so that students may choose between standard lecture seating and table seating. The team also allows students to sit on the ground in the lecture hall in locations that do not block emergency exits. Students are not allowed to eat or drink anything during lectures and discussion sections (except for water) to cultivate a sensory-friendly space that welcomes those with allergies and other sensitivities. Students are permitted to enter and leave the classroom during lectures and discussion sections without penalty, at any time to attend to any of their needs, including to stretch, or to eat a quick snack. Additionally, students are requested to refrain from the use of scented products in lecture and discussion sections to create a welcoming space for anyone with allergies and chemical sensitivities.

At several times during the semester, the course covers sensitive and potentially distressing material, such as when eugenics and other forms of historical and contemporary violence against disabled people are discussed. During these times in the course, the Instructional Team reminds students in advance that they are welcome to leave the classroom as necessary and provides additional reminders as these lectures commence. When provided the autonomy to determine how they engage with difficult content, students can more easily prepare for the material as well as decide to disengage (LSA Inclusive Teaching Initiative, 2017). By providing flexibility in student presence during discussion of difficult topics in class, the Instructional

Team respects the needs of students, including their need to protect their mental health and stability.

Course materials.

Promoting access includes recognizing that financial limitations may impede students from purchasing books (Senack, 2014). Course readings and videos are available to the students for free through the Blackboard Learn (2019) platform. At the beginning of each semester, a handbook is made available to the students through this platform as well. The handbook consists of the course syllabus and all course handouts (worksheets, assignments, rubrics, etc.). Two versions of this handbook are available: a noninteractive version and an interactive version, which allows students to fill in the worksheets and navigate through the handbook by clicking on internal links. Students can request a hard copy of the handbook. By providing all materials at the beginning of the semester the Instructional Team aims to provide structure, transparency and predictability to the students. Students have expressed appreciation for this approach:

"Having all the documents organized in one spot is probably the best thing, much easier to access and helps me stay on track," "I found the handbook to be very helpful in outlining the class and what to expect of the class," and "At first the book looks really intimidating but after going through it, I love how everything is detailed and explained in many different ways. I think it's really helpful for each student in one way or another."

All course handouts in the handbook are available to be downloaded or reviewed online (Blackboard Learn, 2019) individually as well because some students can get overwhelmed by a large amount of information shared at once:

“Although I can see how having the handbook and everything all at once can be helpful to some students, it was mostly overwhelming for me. I experience sensory overload often as a part of my illness, so that may be a factor.”

By developing and distributing all materials before the start of the semester, there is less pressure on the members of the Instructional Team during the semester, which helps them better attend to the needs of the students. The course syllabus implements graphic syllabi principles to make the information more accessible. Graphic syllabi implement visual roadmaps to course content by providing graphics to accompany text (Moon, 2018). All course handouts in the handbook are available in standard and large print to support students who are blind or low-vision. In addition, course handouts are offered in PDF format and directly online on Blackboard Learn (2019) so that students who cannot download PDF files still have access to the material. As demonstrated in Figure 1 and Table 1, 89% of the students said that having online versions of the course handouts available on Blackboard Learn (2019) was helpful or very helpful to them. Lecture slides are uploaded to Blackboard Learn (2019) at least a day before lecture to assist students as they prepare for lecture.

<Refer to Figure 1>

<Refer to Table 1>

In-lecture practices.

Lecture capture.

The Instructional Team utilizes lecture capture, any technology that allows instructors to record their lectures and make them available online; lecture question forms; and brain breaks) during lecture but not in discussion sections. Lecture capture records lectures so students can access them after they occur. Students will hear the instructor’s or guest presenter’s voice and

simultaneously see the lecture slides. Lecture capture has been found to align with the principles of UDL and has been evaluated by students with accommodation needs as a helpful tool. Lecture capture can reinforce learning and help students with conflicting demands on their time due to responsibilities at home, work or health needs (Watt et al., 2014). Lecture capture enables students in the course to review a lecture if they have missed it or to review sections of a lecture that they may not have understood. It also allows students to return to concepts they need more time to understand. For some students, this may ease the pressure of having to understand all material during the 50 minutes of lecture. Sixty-two percent of students in the course identified that they use lecture capture (see Figure 1 and Table 1). Of the students who used this tool, 87% found it to be helpful or very helpful (see Figure 2). Students indicated that lecture capture helps them answer questions, assists them as they rewrite their notes, and accommodates them when they are unable to attend lecture or experience difficulty with concentration during lecture.

Examples of student feedback include:

“I appreciate Lecture Capture. Not all my professors use this but, since you do, it is really reliable. I attend class every time we meet but this tool lets me go back to the lecture for any clarifications or ideas that I may have missed during the class,” and “I love Lecture Capture because if I'm unable to attend one day then I don't have to stress about everything that I missed.”

<Refer to Figure 2>

Lecture question forms.

Students may feel uncomfortable to ask questions in large lecture classes due to the number of students in the space (Stones, 1969). While students are always welcome and encouraged to raise their hands to ask questions at any time in class, the

Instructional Team also uses a Google Form (2019) (an online platform to solicit written answers from students) so students can submit written questions at any time during lecture. One teaching assistant monitors the form and relays questions to the instructor by raising their hand alongside students. At other times the instructor pauses the lecture or uses the brain break to ask the teaching assistant if there are any student questions. The instructor adjusts the lecture to indirectly address the submitted questions, directly answers them, or decides to answer them by email after lecture. Students are able to submit questions in this form without including their names, which allows for anonymity and a greater chance for student engagement with the material during the lecture itself. Additionally, submission of student questions is helpful to the Instructional Team as it provides insight into student engagement with the material and any difficulties they might be experiencing with comprehending the material. Seventy-five percent of students identified that they used the lecture question forms (see Figure 1 and Table 1). Of the students who used these forms, 70% found the lecture question forms to be helpful or very helpful (see Figure 3). Students commented:

“I think the lecture question forms are great for people, like myself, who are shy and do not like to talk in front of a big class but have specific questions about the material,”

“Lecture Question forms are very useful for when I am too nervous to ask a question or I don't want to raise my hand because I'll feel like I am interrupting the lecture,” and

“Though I have not used the Lecture Question Forms yet, it is reassuring to know that should I have any questions regarding the lecture, they will be addressed.”

<Refer to Figure 3>

Brain breaks.

It is commonly believed that humans lose focus and attention when listening to

lectures over a long period of time (Bradbury, 2016). One way to address this lapse in concentration is the use of “brain breaks,” which are quick 2-5 minute breaks during lecture that allow students to experience a short reprieve from the information being shared with them. Brain breaks are often used in K-12 classrooms, and tend to include different types of physical activities. Research has shown positive effects on academic performance, decrease of boredom in students, and increase of student enjoyment (Ferrer & Laughlin, 2017). However, many of these brief activities are inaccessible to disabled students. The Instructional Team instead developed and implemented brain breaks that are as accessible to as many students as possible, such as asking questions unrelated to lecture (e.g., “What is your Halloween costume?”), discussing current pop culture events, learning ASL, tossing around beach balls, doing the wave, classroom community building activities (e.g., “Provide a note of encouragement to your neighbor.”), and more. Brain breaks were used during lectures at the 25-minute mark. Students responded positively to the incorporation of brain breaks, with 83% indicating that brain breaks were either helpful or very helpful to them (see Figure 1 and Table 1).

Many students provided written comments about brain breaks. A number identified that they preferred more activity-based brain breaks, and some even requested longer breaks. Some of their comments included:

“It gives me time to process everything I just learned,” “I like the brain breaks because it gives me a moment to rest my hand after writing my notes and just take a deep breath,” “Brain Breaks for me are very helpful because after a certain point, you start to lose your concentration a bit. Having a couple minutes to relax your mind is great,” and “I think the brain breaks are very healthy components of the lectures since some of the material in

the class can be very heavy and intense, so having a minute or two to take in and process everything and alleviate the weight of the matter.”

To implement brain breaks, instructors amend the amount of content they cover in lecture, which aims to improve the quality of student learning. All students, regardless of disability status, can take advantage of a break during lecture. Implementing brain breaks as an established part of the pedagogy limits requiring students who need breaks to step out and miss part of lecture. Providing this type of broad access fosters disability community.

Extra credit.

The Instructional Team developed extra credit surveys to receive student feedback on various course elements. The Instructional Team recognizes and respects the time that students use to complete the feedback surveys and chooses to reward students for their efforts. Personal circumstances can at times interfere with students’ abilities to fully engage with the course. Providing extra credit opportunities allows students to boost their grades when they need to do so and to not be penalized as a result of losing points if life circumstances arise. The survey results assist the Instructional Team in modifying the course both during the semester and from one semester to the next to best meet the needs of students. The team is prepared to be flexible and adjust elements of the course when student feedback indicates there is room for improvement or a need for change. In participation forms, which will be discussed in further detail below, students have expressed their appreciation for the solicitation of their feedback. The Instructional Team also offers extra credit opportunities to students on assignments, which provides additional support for students.

Office hours.

The Instructional Team created a schedule of office hours so that students can meet with the instructor or a TA any day of the week. Students need to let the instructor or TA know 24 hours in advance if they plan to attend the scheduled office hour. This allows members of the Instructional Team to make the best use of their time and energy. All members of the Instructional Team are also available to meet with students outside of office hours by appointment. If students cannot meet physically, the Instructional Team provides students with the option to meet digitally using Google Hangouts (2019) or to schedule a phone meeting. The Instructional Team has yet to fully evaluate student experience and satisfaction with the office hours policies.

Assessments

The flexibility offered to students in the course can also be recognized in its assessments. Students are assessed on their level of active participation, their performance on a number of online quizzes, as well as their engagement with the assigned course materials (i.e., videos and readings). Finally, the use of grading plans is illustrated in this section.

Participation.

When student enrollment cannot be capped at a low number, instructors need to be creative in order to increase student participation (Rocca, 2010). To improve student engagement during lectures and discussion sections, the Instructional Team developed a participation assessment. Two tools are implemented during lecture to interact with students. The first is Kahoot!, a game-based learning platform (Kahoot!, 2019). Instructors can set up a question or a series of questions in the Kahoot! platform before class and run the question(s) during class. Students log in with a mobile device such as a phone or laptop and complete the question(s) in

real time. Student answers immediately appear on the screen in the hall. The students and instructor can see how many students picked each answer option, but individual student responses are not revealed. In this course, Kahoot! (2019) is sometimes utilized for retrieval practice. Retrieval practice is a learning strategy that focuses on calling information to mind in order to strengthen memory and decrease the likelihood of forgetting the information (Agarwal, 2008). Students are encouraged to recall the information they learned on the lecture content when answering the Kahoot! questions without using their notes. This practice aims to improve their retention of that information. Kahoot! allows the instructor to get immediate feedback on student performance. This assists with adjusting lecture content on the spot. In addition to using Kahoot! for retrieval practice in this course, it is also used to solicit student feedback on class activities. For example, one Kahoot! question asked students to indicate how helpful a worksheet activity was to them. The Instructional Team takes this feedback and immediately adjusts course activities for the current and following semesters. Sometimes an activity will continue to be implemented as is, sometimes it is amended, and sometimes it is eliminated. Students notice how their feedback is implemented by the Instructional Team for the duration of the semester. The use of Kahoot! for student feedback is an example of student-centered learning, as it prioritizes student needs and agency. It also nurtures a more accessible environment by fostering self-determination, which is critical to cultivate disability-friendly spaces.

The second tool used in the course to engage students during lecture is Google Forms (2019). These online forms are used to have students submit short written answers to specific questions on lecture material. Additionally, they are used to allow students to share written feedback about the subject of the lecture for that day or any class activities, and to submit questions that help the Instructional Team clarify course content as necessary. After lecture,

student responses are reviewed by the members of the Instructional Team, and they follow up with students individually or collectively to address their questions.

The Instructional Team tracks the participation of students in Kahoot! (2019) and Google Forms (2019). Students earn points every time they engage with these activities. They receive points if they participate, regardless of their answers. Students who are not comfortable using a mobile device, do not have access to one, or to whom Kahoot! or Google Forms are not accessible, complete and turn in a notecard instead. A large majority of the students found the participation activities in lecture helpful or very helpful to their learning (85%) (see Figure 1 and Table 1).

During discussion sections, students are also encouraged to engage. They earn points for arriving on time, taking notes during class, listening to fellow students and their teaching assistant, being on task during class activities, and working with other students. In addition, they earn points for speaking up during the discussion section or by submitting a brief post to the discussion board on the Blackboard Learn (2019) platform after class. In the written posts, students can request to review a concept that they do not understand, share a question that demonstrates in-depth engagement with the week's material, or write a brief reflection on the week's materials. By allowing students to participate in a written fashion for full points, flexibility is offered because students are not required to participate verbally in class if this is not comfortable or accessible to them. Students have shared positive feedback on this flexibility:

"I really appreciated the fact that we are not forced to speak up in class, rather we can ask questions through the question form link or write a post on the discussion board because people, including myself, are shy and do not feel comfortable public speaking," "I particularly like that we can still get points for discussion even if we cannot participate in

class discussions (I have social anxiety and a speech impediment)," and "I like the participation system that we currently have because many people often do not like to speak in front of class ... [it] allows everyone to participate in a more comfortable environment."

Students start the semester with flexible participation points to count toward their grade. These points can cover absences for several combinations of lectures and discussion sections. Because of flexible participation points, students still have the opportunity to earn a 100% for their participation grade, even if they are absent a few times.

Quizzes.

Research has found that online, outside of class, quizzes positively impact student learning (Johnson & Kiviniemi, 2009). This course distributes online quizzes with multiple choice and multiple answer questions to students through the Blackboard Learn (2019) platform. These quizzes do not require students to complete an in-classroom exam or to handwrite their answers. The quizzes assess student comprehension of class concepts and reading material and reinforce learning and active engagement in class. Students complete four unit quizzes during the semester and one final quiz at the end of the semester. They can use all course material and notes to complete the quizzes. This accommodates students who need access to material to assist with recall. Quizzes include questions randomly selected from a pool with a large number of questions. The quizzes are available for an entire week prior to their due dates and do not have time limits. Students are able to start a quiz, save their answers, and come back to complete it later. This allows them to take a break or sit with a question and come back to answer it at a later time. Students complete these quizzes in a space outside of the classroom where they feel comfortable. They can move around that space while taking the quiz if needed.

Several of these strategies aim to assist students with testing anxiety but also benefit students with other learning needs.

Eighty-six percent of the students in the course found the quizzes to be helpful or very helpful (see Figure 1 and Table 1). Written student feedback demonstrated that students appreciated being able to take the quizzes at their own pace and to review their notes when needed.

Reading engagement.

To provide structure to students in maintaining a consistent reading schedule, the Instructional Team developed an assessment called "reading engagement." The reading engagement assessment is implemented weekly and offers flexibility to students. The first and most apparent form of flexibility is through the decision students have to either complete in-classroom Kahoot!s (2019) with short questions on readings (a different use of Kahoot!s from the participation assessment) or to complete a brief written assignment on the readings prior to lecture. The brief written assignment initially consisted of a short summary of all the readings and video materials assigned for the week. In order to improve the equity between the two options, the Instructional Team will be experimenting with having students submit brief written answers to a few questions on the weekly material. Students can complete either assessment option every week and are allowed to move back and forth between participating in Kahoot! or completing the brief written assignments. Students who choose to participate in the in-classroom assessment option can submit their answers on a notecard during lecture instead of participating in the Kahoot!. Additional flexibility in the reading engagement assessment is available through the ways students earn points in this assessment. Students can miss two weeks of reading engagements without penalty and still be able to earn full credit on the assessment.

Eighty-two percent of students found the Kahoot!s (2019) used for the reading engagement assessment to be helpful or very helpful. Sixty-six percent of students used the short written alternatives to the in-class Kahoot!s at some point in the semester (see Figure 1 and Table 1). Sixty percent of these students found them to be helpful or very helpful. Even though students complained about the amount of reading required, a phenomenon familiar to many instructors, written feedback on the reading engagement assessment also indicated students appreciated being able to choose how to fulfill the requirements of the assessment. One student wrote:

“I appreciate how students are given an opportunity to either submit a reading engagement summary or take the kahoot quiz during class. This allows some flexibility in managing homework and allows for students to have a bit of control when completing their homework.”

Students also found that the assessments helped ensure they would read the assigned course materials: “I love the RE Kahoot! (2019) because it's something different and forces me to actually read thoroughly.”

Grading plans.

Inspired by Toni Weiss’s strategy to help students be more invested in her course, the Instructional Team introduced "grading plans" to students (Lang, 2018). Grading plans allow students some control in the calculation of their final grades. The aim of grading plans is to increase student engagement in the challenging context of large classes.

Grading plans increase flexibility in the course by accommodating students’ learning needs. This teaching practice encourages students to reflect on their own learning and to identify how they learn best. Additionally, it can provide them with the insight that different assessments are designed to help them demonstrate different types of learning

and that they can decide what is most important to them in their performance (Lang, 2018). This may help students improve their self-advocacy skills as they learn to express their learning needs and what assessments are best suited for them.

While Weiss provided point ranges for each assessment to students, the Instructional Team developed four grading plan options for students instead. The options placed more weight on specific assessments and decreased the weight of other assessments. Students in the course are able to select a grading plan that recognizes and rewards their strengths. Students have five (soon to be seven) weeks to develop an understanding of the course and its assessments before selecting a grading plan. Students are not allowed to change their grading plan after the submission deadline of their selection. Student investment and engagement in the course during the beginning of the semester is rewarded by the use of the grading plans. The grading plan options that were developed include a standard option for students without a clear preference for a grading plan as well as for students who do not make a selection, an option that weighs participation more heavily, an option that weighs written work more heavily, and an option that weighs performance on online quizzes more heavily. Students greatly appreciated the availability of grading plans. Eighty-seven percent of them found these plans to be helpful or very helpful (see Figure 1 and Table 1). Additionally, approximately 15% of students took the time to submit written comments about their experiences with the grading plans. Examples of student comments include the following (See Figure 1 and Table 1):

“I like that we can pick our grading plan because I'm a shy person, which means I don't often speak up in public because that makes me feel uncomfortable. The grading plan helps that out, so it doesn't put much grade percentage towards participation,” “I think the Grading Plans are a great resource because many students have weaknesses in certain

areas and its good for them to choose," "Grading plans are such a great idea! Students know what they do best in and what they struggle with and this is such a great opportunity for them to take that into action," and "The Grading Plans are really great, I think it is important that the class acknowledges that each person learns differently".

Lessons Learned

Successes and Course Development

Incorporating UDL, which requires establishing flexible and accessible teaching materials and procedures, has led to multiple successes in the large enrollment course discussed in this paper. The Instructional Team has observed increased student engagement, understanding of disability studies content and appreciation of disability culture. The team also witnessed a stronger sense of community in the classroom. Additional research is necessary to empirically validate these observations. Through written and verbal feedback, students have responded positively to the flexibility and accessibility of the materials and procedures provided within the course. Students appreciated and encouraged the continual use of technological instructional tools, such as lecture capture, lecture question forms, Kahoot!, and online quizzes. Students also expressed that brain breaks improved their ability to learn the material during lecture. Finally, students appreciated the flexibility provided by the grading plans. This strategy enabled them to focus on their strengths in learning and to lessen the impact of their weaknesses.

In order to successfully implement flexible and accessible teaching practices, the Instructional Team communicates clear instructions to students and establishes strict guidelines for different options. Students experience flexibility within clear parameters. For example, students were not allowed to change their grading plan after the submission deadline. The available time and energy of the members of the Instructional Team are not unlimited. Having

clear parameters in place allows the Instructional Team to use flexible and accessible teaching strategies in a course with large enrollment.

The tools and strategies outlined in this paper have been developed over the course of three semesters and adjustments have been made to them over time. The authors encourage instructors to reflect on their use of teaching strategies and tools from one semester to the next to continually improve their course. Without intentional reflection, a large enrollment course may stagnate and no longer best meet the needs of the students and the Instructional Team. Additionally, as technology evolves, technological instructional tools may need to be implemented differently from semester to semester.

One example of how the Instructional Team made changes to the course over time is the development of the online quiz assessments. Initially, students completed online quizzes through the Blackboard Learn (2019) platform on a weekly basis. The aim of having weekly quizzes was to maintain a consistent schedule. After recognizing the large amount of time and energy necessary to maintain such a weekly assessment for both students and instructors, the Instructional Team decided to change to a system in which students were only required to take one quiz per unit (every three weeks).

Important in the ability to continue to improve a course is to maintain a stable Instructional Team from one semester to the next. It takes time to orient new members of an Instructional Team so they are able to successfully implement course teaching strategies. In the course discussed in this paper, the Instructional Team consists of the same members for the duration of an academic year. From one academic year to the next, only two of the five teaching assistants are replaced. Senior teaching assistants move on in their academic careers and junior teaching assistants join the course.

Next Steps

Next steps for this Instructional Team include exploring other forms of technological tools (beyond Kahoot!, Google Forms, lecture capture, etc.) to increase the number of activities to be used by the Team and to further improve student engagement. The Team also wants to develop alternatives to written assessments (such as spoken and poster submissions, and other creative formats) to increase flexibility and accessibility. This has to be done carefully in order to continue to meet the university requirements for a general education course. Though discussion section activities were not explored in detail in this paper, the Instructional Team will continue to develop activities that increase student engagement. One possibility is creating lists of activities to apply to specific course content. Teaching assistants are then able to select the option that works best for the students in their section. Alternatively, the students might be able to choose which activity best meets their needs. The Instructional Team will also develop team-based learning activities to help better engage students during the two weeks of lecture that cover history, which have been noted by students in written feedback as boring or difficult to follow.

Conclusion

Research has addressed multiple active learning methods that improve student experiences in large enrollment classes and has documented the benefits of UDL in these classes for a wide variety of students, including disabled students. This paper outlined how one Instructional Team applied UDL principles to teaching disability studies in a large enrollment course by establishing flexible and accessible teaching practices. The authors demonstrated how using UDL directly models disability studies concepts to students in the course, which improves student experience. The use of UDL is important in disability studies courses because it nurtures and practices disability culture and community. Courses that implement UDL better meet the

individual needs of students and do not impose inflexible and inaccessible expectations and requirements onto them. As the number of large enrollment courses increases, instructors must consider how their pedagogy will impact the experiences and learning of all students, including and especially disabled students. The authors hope this paper will be helpful to these instructors. With an increase in the number of disability studies programs, disability scholars have the opportunity to be leaders in the development of inclusive teaching strategies even as student enrollment continues to increase. The authors envision a future where instructors in all fields intentionally design courses to be flexible and accessible because they recognize and respect the diverse needs of all students. This will actively welcome disabled students as full and valued members of the higher education community, which aligns with the goals of disability studies as a whole.

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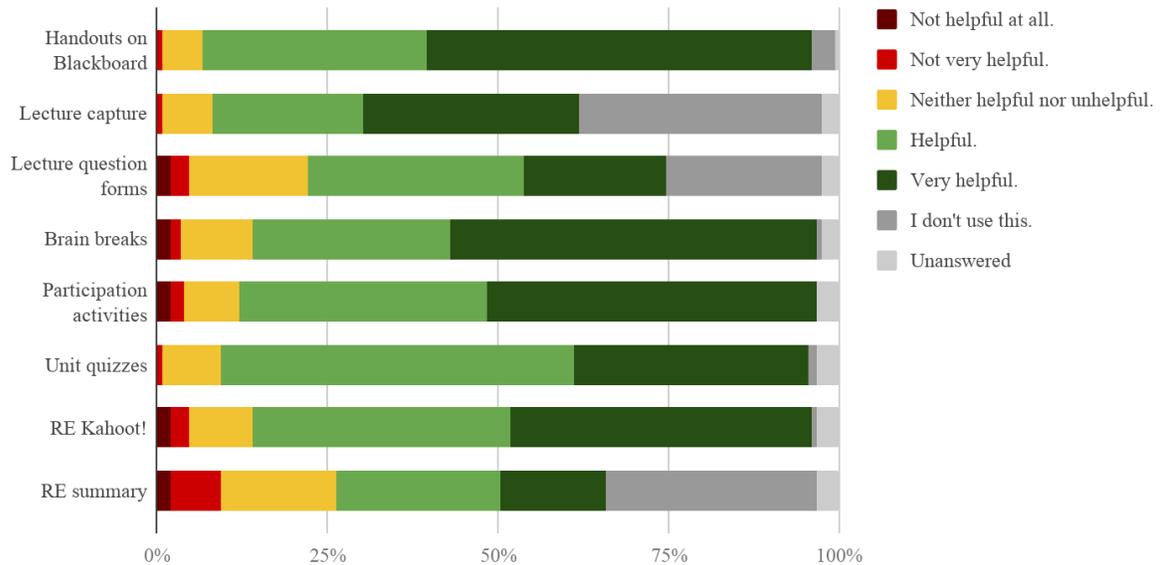


Figure 1. Student experience with teaching strategies. This figure visualizes the percentage of student responses to each teaching instructional tool discussed in this paper. From left to right, dark red indicates “Not helpful at all,” red indicates “Not very helpful,” yellow indicates “neither helpful nor unhelpful,” green indicates “helpful,” dark green indicates “very helpful,” dark gray indicates “I don’t use this,” and light gray indicates “unanswered.” This graph has been run through the Color Blindness Simulator, and colors may not correspond with the description provided (Colblindor, 2018).

Alternate-text:

Title: Figure 1. Student experience with teaching strategies

Description: A bar graph with 8 bars displaying in color student response rates to different teaching strategies on a scale of 100%.

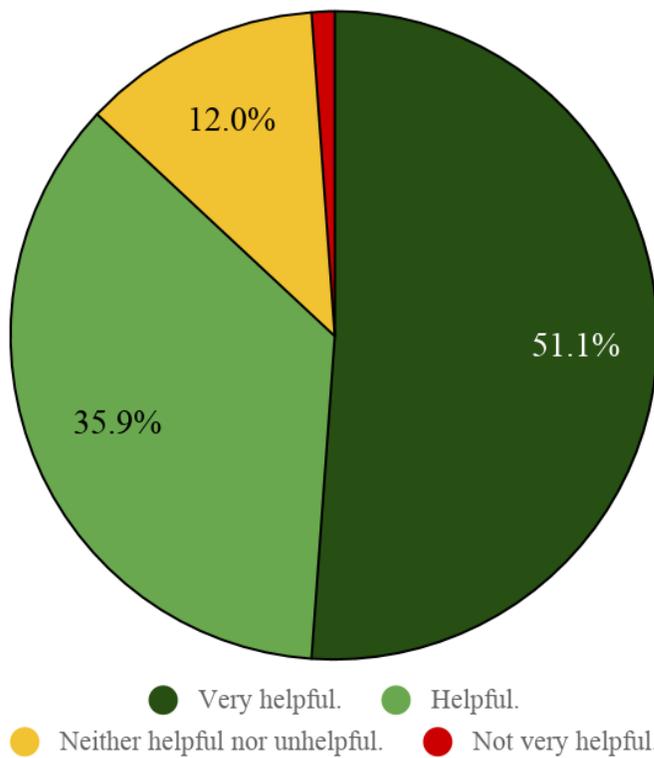


Figure 2. Student experience with lecture capture. This figure portrays the responses of students who used lecture capture. From 12 o'clock and clockwise in direction, dark green indicates "very helpful" (51.1%), green indicates "helpful" (35.9%), yellow indicates "neither helpful nor unhelpful" (12.0%), and red indicates "not very helpful." This graph has been run through the Color Blindness Simulator, and colors may not correspond with the description provided (Colblindor, 2018).

Alternate-text:

Title: Figure 2. Student experience with lecture capture.

Description: A pie chart with 4 slices displaying in color student response rates to the use of lecture capture.

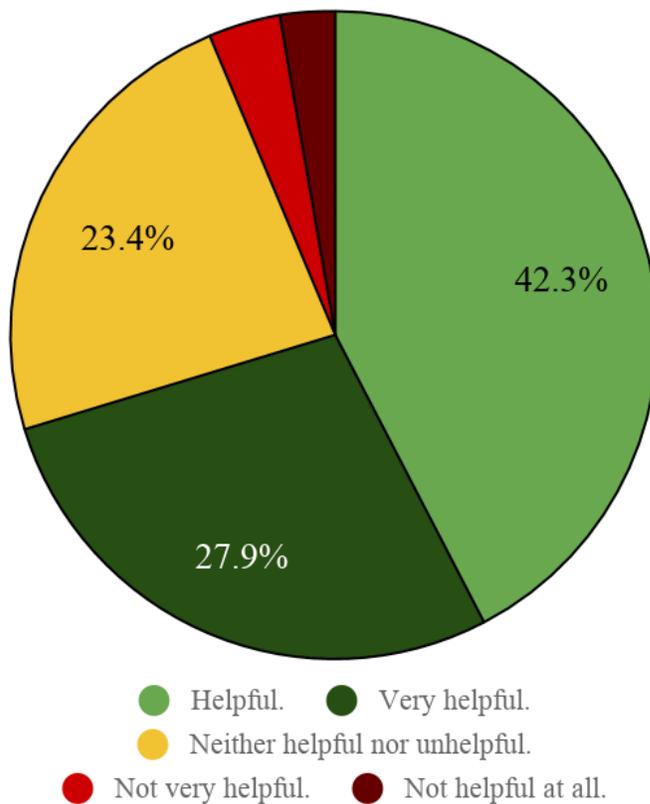


Figure 3. Student experience with lecture question forms. This figure portrays the responses of students who used lecture question forms. From 12 o'clock and clockwise in direction, green indicates "helpful" (42.3%), dark green indicates "very helpful" (27.9%), yellow indicates "neither helpful nor unhelpful" (23.4%), red indicates "not very helpful," and dark red indicates "not helpful at all." This graph has been run through the Color Blindness Simulator, and colors may not correspond with the description provided (Colblindor, 2018).

Alternate-text:

Title: Figure 3. Student experience with lecture question forms.

Description: A pie chart with 5 slices displaying in color student response rates to the use of lecture question forms.

Table 1

Student Feedback on Teaching Strategies

	Not helpful at all (%)	Not very helpful (%)	Neither helpful nor unhelpful (%)	Helpful (%)	Very helpful (%)	I don't use this (%)	No answer (%)
Handouts on Blackboard	0.00	0.67	6.04	32.89	56.38	3.36	0.67
Lecture capture	0.00	0.67	7.38	22.15	31.54	35.57	2.69
Lecture question forms	2.01	2.69	17.45	31.54	20.81	22.82	2.69
Brain breaks	2.01	1.34	10.74	28.86	53.69	0.67	2.69
Participation activities	2.01	2.01	8.05	36.24	48.32	0.00	3.36
Unit quizzes	0.00	0.67	8.73	51.68	34.23	1.34	3.36
RE Kahoot!	2.01	2.69	9.40	37.58	44.30	0.67	3.36
RE summary	2.01	7.38	16.78	24.16	15.44	30.87	3.36
Grading plans	0.00	0.67	9.40	29.53	57.72	2.69	0.00