

# Designing for Diversity and Inclusion: UDL-Based Strategies for College Courses (Practice Brief)

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## Description of the Problem

The percentage of students enrolled in HE who report having a disability increased from approximately 6% in 1995 to 19.4% for undergraduate and 11.9% for post baccalaureate students in 2019 (National Center for Education Statistics, 2021). In addition, the numbers of students who are first-generation, culturally and linguistically diverse, international, adult learners, and career switchers keep increasing as well (Integrated Postsecondary Education Data System, 2020). The diversity of learners in today's classrooms requires special attention to create inclusive and responsive environments that address variability: Proactively building in options, supports, and scaffolds is possible with UDL (Evmenova, 2021; Rao, 2019). In fact, the Higher Education Opportunity Act (HEOA, 2008) emphasizes the use of UDL as the way to offer flexible and inclusive instruction for ALL learners. HE instructors can benefit from using a systematic design process that integrates UDL and proactively focuses on inclusion and access for all (Rao, 2019).

## Description of Practice

In order to compile a comprehensive list of UDL strategies that are used in both research and practice, the authors of this brief, four UDL experts, collaborated in a self-study to explore our shared interests in designing accessible and inclusive higher education opportunities. We are active UDL researchers and UDL implementers in HE who regularly publish about UDL, present at national/international conferences, and participate in service and leadership activities with professional organizations in the UDL field. We used a self-study research method to foster our own professional development and to produce new knowledge about educational practices (Collin & Knowles, 2020). We (a) reviewed the literature to identify UDL-based practices used in HE environments, (b) conducted individual and collective inquiry examining how we used UDL-based practices related to the literature, and (c) applied a systematic

UDL design process in our own courses as presented in this brief. During this self-study, we met periodically to discuss findings from the literature and collectively extend our pedagogical ideas about UDL.

### UDL Implementation Examples for Varied Courses and Formats

#### *Case Study #1: Introduction to Special Education; Undergraduate, Face-to-Face Course*

**Participant Demographics.** Students enrolled in this undergraduate, face-to-face introductory course were pursuing degrees in HE environments, (b) published between 2010 and 2021, (c) described UDL application to course design/pedagogy, and (d) specifically referenced UDL. Overall, 37 research-based articles and 31 descriptive articles and book chapters met these criteria (available from the authors upon request). For purposes of

this project, we focused on authors' descriptions of UDL guidelines and checkpoints in course design. The first author generated a list of UDL strategies from the articles/chapters, and organized them by the three UDL principles (see Table 1). The fourth author coded a random sample (45% of the set) and established inter-rater reliability at 95%.

Next, we reflected on our own use of the UDL-based practices and strategies identified in the literature. We individually rated whether and how we used each practice and strategy in our own courses. The rating options included 0 = I don't use it and 1 = I already use it; 2 = I hope to use it in the future. We met to discuss in more depth the guidelines and checkpoints from the literature we use in our own courses (see Table 1) and extend our collective understanding of how those strategies reduce barriers for students in HE courses.

Based on these discussions, the first three authors applied UDL to three different HE courses in education, as described in the next section of this practice brief. We used a systematic UDL design process, the

UDL Design Cycle (Rao, 2019; Rao & Meo, 2016),

to proactively and intentionally reduce barriers and increase access for our students. As a first step, we each considered learner variability in our courses. Learner variability includes the abilities and strengths (e.g., ability to be organized and self-directed), backgrounds and experiences (e.g., speaking multiple languages, resilience due to life experiences), preferences (e.g., preference to learn and brainstorm alone or in a group), as well as support needs (e.g., needing structure to succeed, writing supports, not knowing the expectations for higher education) of our students (Rao, 2019). We then designed assessments, instructional methods, and chose materials/resources to use, taking the UDL guidelines into consideration at each step. In the next section, we describe the three courses we developed based on the discussions of this self-study.

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Table 1  
UDL Practices and Strategies from the Literature Validated and Used by the Four UDL Experts

Multiple Means of Engagement	Multiple Means of Representation	Multiple Means of Expression
<p>7: Provide options for recruiting interest</p> <ul style="list-style-type: none"> <li>• Offer choices in assignments, assessments (7.1)</li> <li>• Offer choice in due date, topic, format, etc. (7.1)</li> <li>• Allow groups to choose goals and timelines (7.1)</li> <li>• Create authentic assignments related to the practical applications to future careers (7.2)</li> <li>• Use cases, simulations, hands-on activities (7.2)</li> <li>•</li> </ul>		

(Table 1, continued)

Multiple Means of Engagement	Multiple Means of Representation	Multiple Means of Expression
<p>9: Provide options for self-regulation</p> <ul style="list-style-type: none"> <li>• Use gender-neutral language and inclusive examples (e.g., race, culture) (9.1)</li> <li>• Offer descriptions of assignments, rubrics, outlines, exemplars (9.1)</li> <li>• <del>Send welcome message with expectations (9.1)</del></li> <li>• <del>Send welcome message with expectations (9.1)</del></li> <li>• <del>Send welcome message with expectations (9.1)</del></li> </ul>		

ties. Next, the instructor established clear goals: *Case Study #2: Introduction to Disability;* learners were to demonstrate the knowledge of special education law, characteristics of IDEA disability categories, and basic concepts of inclusive behavioral and instructional strategies. The assessment had to be consistent across the course sections and included multiple choice quizzes of each textbook chapter.

Description of UDL Implementation. Although the assessment was predetermined, the instructor focused on utilizing flexible methods in the course to support student mastery on assessments. To address learner variability, scaffold the background knowledge, and, as a result, optimize engagement, students were required to read assigned chapters and submit reading notes prior to class. These reading notes, however, could be submitted in any modality: typed notes, photos of handwritten notes, photos of highlighted sections of the textbook, sections of completed study guide for the quiz, or recorded narration of reading reflections. In addition, during the class, students had multiple opportunities to engage with the course materials, the instructor, and each other. This engagement took place through small and large group discussions, hands-on activities, *Teaching Exceptional Children* article presentations, consistent with UDL's engagement guidelines related to authenticity and relevance.

To demonstrate their knowledge and understanding, students took chapter quizzes. Although quizzes were designed by textbook authors, students had options for taking the assessment. Every four chapters, students could select the quiz modality: verbally during office hours, on paper in the classroom, an online version at home or an online version in the classroom, aligning to UDL guidelines for expression/action. When submitting the assessment, students were asked to provide a rationale for their choice. This component allowed students to develop reflection and self-assessment skills and consider how they learn, which is consistent with UDL's engagement guidelines.

Students had multiple representations of content in the course: through independent reading of the chapter, during lectures, by watching videos, in-class discussions, and article presentations. The content was first introduced to students through independent reading and note taking to provide scaffolds and build background knowledge. Then, the content was reinforced during instructor-led lectures and group discussions. Finally, students enhanced their knowledge by reading scholarly articles and presenting their summaries in class.

their understanding, students choose between the following two assignments: (a) conduct an interview with a person with a disability or (b) create an audio/video PSA about a disability.

***Case Study #3: Introduction to UDL; Graduate, Asynchronous Online Course***

**Participant Demographics.** In this graduate-level seminar course on UDL delivered in an asynchronous online format, students had varied interests including assistive technology, autism, and applied behavior analysis. Due to the focus of their graduate programs on individualized instruction and support, many students in the course had previous experiences working with learners in one-to-one settings. However, they often lacked applied knowledge of how to support learners with disabilities in inclusive settings using UDL. The course was organized into eight learning modules introducing UDL principles and guidelines across different learning environments (e.g., online, postsecondary) and subject areas (e.g., literacy, math, science, social studies). The instructor incorporated numerous UDL-based strategies in the course (described in detail in Evmenova, 2018, 2021), modeling for students how UDL could provide flexible options and supports. Here we highlight one feature that was used to offer additional opportunities for students to engage with the course content, apply UDL to large classroom settings, and to monitor the quality of their own learning.

**Description of UDL Implementation.** Providing options for self-regulation is one of the guidelines under UDL's engagement principle. It is important to offer ways for students to self-assess and reflect on their progress as part of developing their own agency as learners. A series of four UDL-based self-assessments was developed to illustrate how UDL could be used in different inclusive environments. The assessment presented a scenario, including the goals of a lesson and description of student characteristics in an inclusive classroom (e.g., grade level, subject, learner abilities, needs, and barriers). The scenario was represented via multiple modalities, such as interactive slides, text, and audio options.

After reviewing the scenario, students were asked to consider learner variability and identify barriers in the curriculum that could arise for students and then to reflect on how UDL-based strategies could be used to reduce barriers and address students' strengths, backgrounds, support needs, and preferences. Students had multiple options for responses including, completing an auto-graded quiz (e.g., multiple choice, matching characteristics to strategies) or submitting a text-based, an audio-based, or a video-based reflec

tion. While self-assessments were optional, students could receive extra credit for completing one or more. In addition, after completing the self-assessment, students received access to a handout in which the instructor shared and explained her own UDL ideas for the same scenario. Thus, students were able to review and match their ideas to the instructor's decisions.

learners (Cawthon et al., 2019; Savaglio & Spector, 2021; Tobin & Behling, 2018). This practice brief

