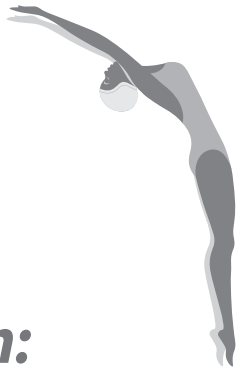

CHAPTER 8

Flexible Instructional Design:

Create Accessible Classrooms and Remove Barriers to Learning

The goal of this chapter is to explore the different ways educators can intentionally create flexible, open, and accessible learning experiences and environments that plan for and celebrate learner variability. In the following pages, we'll share a variety of lessons and activities, at different levels of UDL understanding and application, to help you envision what this might look like in your classroom.

We've divided the chapter into the now-familiar Wade In, Shallow Swim, and Deep Dive sections. Again, you can choose a level that supports your current understanding, or, if you see something at another level that piques your interest, simply go to the UDL Planning Guide and look at the related strategies for your level. (Remember, you can access the pages of the UDL Planning Guide via the QR code at the end of Chapter 7.)

It is important to note that although we may reference a specific grade level in the examples, the skills and strategies shared can often be used at any grade level with scaffolding, review, and/or support. Before dismissing a strategy or tool, consider the variability of your classroom and who might benefit from its use.

Figure 8.1 To help you give students an all-access pass, start by applying the UDL Guidelines to the building blocks of good instructional design.

The All-Access Pass to Class

Have you ever purchased an all-access pass, the one that gets you into every ride and event at an amusement park? You may decide not to go on the extreme roller coaster or in the haunted house, but you could if you wanted to. That's how we envision an all-access classroom, but rather than rides and events, learners have unlimited access to learning. No tool, resource, idea, or event is unavailable to them. Through careful design, no one is "too short" to ride. No one is excluded (Figure 8.1).

Although it is tempting to alter many aspects of your practice, remember that the goal is to take an iterative approach: to narrow your focus as you deepen your understanding and application over time. With this approach in mind, we'll concentrate on three aspects of flexible instructional design at our familiar levels of understanding:

Wade In: Instructional goals

Shallow Swim: Accessible materials, resources, and tools

Deep Dive: The physical and virtual environment

Connecting to the ISTE Standards

ISTE Standards for Educators

The Educators section (ISTE, 2017) of the ISTE Standards supports the development of an "all-access classroom" through good instructional design. In particular, the following roles and indicators encourage the creation of flexible, open, and accessible learning experiences and environments that plan for, and celebrate, learner variability: **Leader** (2.2.b), **Collaborator** (2.4.b), **Designer** (2.5.a, 2.5.c), and **Facilitator** (2.6.b).

Wade In: Instructional Goals

The first area of focus for this chapter is the examination of goals and how we can design them to be more equitable and understandable. To provide context, we'll use a science lesson on biomes for grades 4–6. Through that lens we will explore three strategies at the Wade In level:

- Separate the goal from the means to demonstrate the goal.
- State learning goals in student-friendly language.
- Help learners articulate the learning goals.

Reviewing and Rewriting Curriculum Goals

Notice that the three points above not only help learners understand what is expected of them, but also help them begin to "own" the goals by articulating them. More importantly, by separating goals from means, you've started to move the needle on what learning is and who is successful in demonstrating it (Figure 8.2). Universal Design for Learning asks us to recognize that knowledge goals related to the understanding of concepts, content, and fact should be separate from skill goals when possible. Unfortunately, confounded goals are so pervasive you may not even notice them. This Is the Way We've Always Done It (TTWWADI) may prevail. When you confound goals it is difficult to determine whether a student was unsuccessful because of lack of understanding or if they had difficulty with the means of expressing what they know.

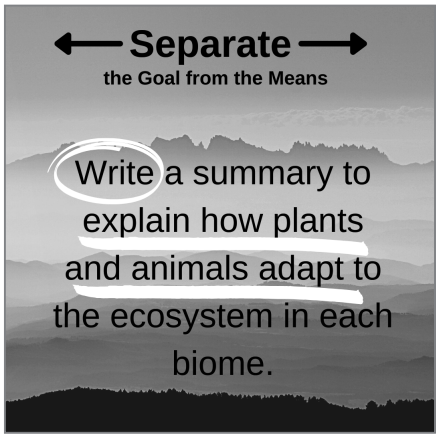

Figure 8.2 When possible, separate knowledge goals related to the understanding of concepts, content, and facts from the means for learners to demonstrate understanding.

Consider the goals or objectives for the biome lesson:

- Identify terrestrial and aquatic biomes.
- Describe the environmental factors and the plants and animals of each biome.
- Identify the location of different biomes on a world map.

- Understand the interrelationship between environmental factors and the plants and animals within a biome.
- Describe examples of plant and animal adaptations to specific biomes.

Now, ask yourself the following questions for each of the lesson's goals:

- What kind of goal is it? Is it a content (knowledge) goal that expresses what learners should know? Is it a method (skills) goal that expresses what learners should be able to do?
- Does the goal separate the ends from the means of achievement or demonstration of mastery? If so, how?
- If the goal does not separate the ends from the means of achievement, can I separate the two and provide learners with options to show what they know?
- If the goal and the means of achievement are connected (the activity requires the student to write an essay, for example), what kinds of scaffolds or tools could I provide to support the learner in achieving the goal?
- Does the goal state exactly what is expected of students? What is missing?
- Is the goal in student-friendly language? Could my learners articulate the goal as it is stated? What support would they need? What changes would need to be made?

In this lesson example, most of the goals focus on what learners should *know* at the end of the lesson, using words such as *identify*, *describe*, and *understand*. From a UDL perspective, this is good because *how* learners identify or describe the environmental factors of each biome or the plants and animals found in it is not specified, and this provides learners with some flexibility for how they can demonstrate their understanding (UDL guideline: Optimize choice and autonomy). Take care, however, as *describe* often means oral or written language.

The one exception is the third goal, which requires learners to identify the location of different biomes on a world map. During the lesson, a print map is used for this purpose. Such a map, which presents the information using a graphic only, would be inaccessible to a learner who is not able to see it due to a visual impairment. Students with visual processing difficulties may also find the map's information equally inaccessible. In addition, younger students may have little conceptual understanding of a world map and as such pointing out biome locations is a visual memory task. As you create instructional goals, read or review Wiggins and McTighe's (2005) seminal work, *Understanding by Design, Second Edition*, an approach to instructional design that focuses on backward planning around the enduring understandings we want learners to have. They recommend that when planning instruction you determine what is essential, important, and nice to know. *Essential* questions are deep, rich questions. *Nice to know*, like locating something on a map, is a less important skill that may take away from time you could use to focus on the essential skills and concepts related to the main focus, such as the science aspects of the lesson in the biomes example.

If, however, you determined that the goal is necessary to meet a standard, you would need to use a different kind of map to ensure you are not introducing barriers for some learners. For example, you could use a tactile map, such as the ones provided by the American Printing House for the Blind (APH), and you would just have to account for the cost of this specialized map as well as the time required to acquire it. Although you may not have any blind students in your classroom currently, with the trend toward inclusion, it is possible that you could in the future. Planning for that variability now would make your lesson plan more flexible and reusable in the future, regardless of who comes through the door at the beginning of each school year. Furthermore, a tactile map may be simpler and thus more easily processed by someone whose spatial skills are not as advanced. Thus, the tactile map would be "essential for some, but useful for all."

After revision, the goals might look as follows. Notice that they are now written from the learner's perspective. They also include specific and measurable criteria, and the means to demonstrate understanding is not limited by a narrowly prescribed method.

At the end of this lesson, I will be able to:

- Identify my biome type (terrestrial or aquatic) and include three (3) reasons for my identification
- Describe at least three (3) environmental factors and five (5) native plants and animals of my biome
- Show my understanding of how environmental factors are interdependent with the plants and animals within my biome
- Identify at least three (3) similarities and three (3) differences between my own biome and a partner's biome
- Describe at least three (3) examples of plant and animal adaptations found in my biome.

Pause and Reflect

Before reading our suggestions, take a moment to rewrite the biomes lesson's goals by separating the goals from the means. Your goals may look different from ours depending on your grade level. To help you focus the goals, consider using the SMART mnemonic. Goals that are Specific, Measurable, Attainable, Results-oriented, and Time-bound are more easily understood and measured. There is a PDF version of a SMART goal planner available for you to use on the book's companion website (scan the QR code at the end of this chapter).

Student-Friendly Goals

Once you've separated the goals from the means, focus on helping learners articulate these goals. At this stage, if you usually write goals on the board for students to reference or record, you may want to consider having students work with you to write them in more student-friendly language and/or have students articulate what the goals mean to them. This could be done through a simple Think-Pair-Share where partners talk with each other about the lesson's goals, and then the class shares out what

each goal means to them. Or, if you have a survey or questionnaire tool, such as Google Forms or Socrative (Socrative.com), you could quickly garner whether students understand the goals or can match the goals with a student-friendly version. This type of task would also serve as a quick formative assessment, helping you gauge student readiness to move forward in the lesson.

It takes time for students to help you write or rephrase learning goals. But given that students often fail to read the goals carefully written on the board by the teacher, it is time well spent. The simple act of helping rewrite goals makes them more understandable, gives students more ownership of learning, and sets the stage for independent goal setting in the future. It signals to your students that you're ready to "... dedicate time to collaborate with ... students to improve practice, discover and share resources and ideas, and solve problems" (ISTE Standards for Educators 2.4, Collaborator).

You can now head to "Next Steps" at the end of the chapter to apply (and share with us) what you've learned, or continue to the next section to learn more about accessible resources, foundational to the creation of an all-access classroom.

Shallow Swim: Accessible Materials, Resources, and Tools

The second area of focus for this chapter is the accessibility of your classroom resources to ensure learners have clear, open access to information. We'll use a social studies lesson at the high school level as context while we focus on three strategies an educator at the Shallow Swim level might use:

- Ensure all technology options (apps, platforms, tools) are accessible, and provide alternatives if they are not.
- Ensure students have continuous access to a wide variety of technology tools, model your use of them, and encourage use for both student need and preference.

- Model and guide students in articulating their needs and advocating for the use of certain methods, tools, resources, and so on.

Taking the time to ensure your classroom has accessible educational materials is important in four ways:

- Providing a variety of ways to access, engage with, and process information opens doors for learners.
- It is easy to stop at providing options and choice and forget to ensure accessibility. Actively engaging with resources to ensure they are accessible to the widest variety of learners gives you insight into the advantages and limitations of the various media.
- Ensuring resources and tools are accessible to all is also an excellent way to walk the UDL talk. It sends a tangible message that the classroom is changing; its positive impact on students is immediate.
- Providing options that include support technology, such as text to speech or speech to text, acknowledges the importance of thinking (over decoding or writing) and offers support when goals and means cannot be separated.

Lesson Materials in a Social Studies Lesson

Consider a middle school social studies lesson that relies on a number of multimedia resources that learners will use to research the use of propaganda during World War II. A lesson's materials is one area where the need for accessibility is paramount. The goal with UDL is not just to provide students with access to a variety of resources and assume they are usable in their current (often digital) form. The full goal is to review resources with a critical eye, culling inaccessible materials, finding more robust tools, and providing supports and scaffolds when needed. No single resource is perfect for all learners; every resource has an accessibility limit, some (printed text, for example) more than others. For this reason, it is important to provide a selection of media and tools for learners to use, taking the time to ensure that they are accessible and learners can

seamlessly interact and learn from them. In the propaganda lesson, a teacher might be tempted to skim the resources and, because they are digital, assume they are accessible. It is important to recognize that it isn't as simple as digital equals accessible equals UDL (Figure 8.3). If there are significant barriers in the materials you provide learners, then the task of turning information into useful knowledge is derailed. Time is spent accessing and processing rather than understanding, analyzing, applying, and reflecting—the skills we want learners to develop. Engagement and achievement suffers when learners become frustrated and discouraged by the level of effort required to overcome these barriers and the message these barriers send to those that cannot use the resource to learn.

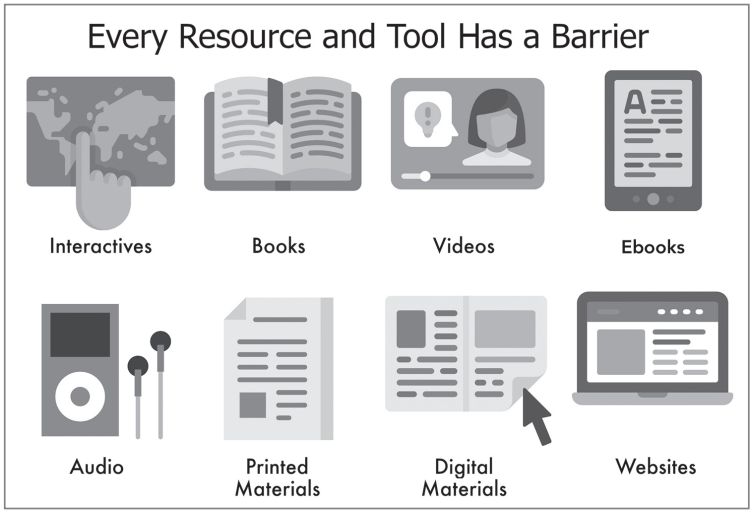

Figure 8.3 No single resource, even if it is digital, is free of barriers. For this reason, it is important to provide a range of options, not forgetting to review the accessibility limits of each.

Tweet: It isn't as simple as digital = accessible = UDL. No one resource fits every learner. Provide a selection of media and tools for learners to use. Ensure that they are accessible and provide technology to help learners successfully interact with and learn from them. #DiveIntoUDL

Cultural Barriers

The technical ability to interact successfully with resources is just the first barrier. Once learners gain access to the content, what will they find? When learners are not represented in the material, when their experiences and culture are not present, another barrier is erected. As you explore resources for your next unit of study, look for ways to expand your definition of accessibility and what constitutes a barrier. In many schools, your library-media specialist can support you. They often have access to the latest resources that embrace diversity and welcome different perspectives and experiences. Find time to collaboratively plan with colleagues (in person or online). Together, challenge your assumptions and start to build resources to meet the needs of all learners. Finally, reach out to your students and community. Ask them to help you find, refine, and build resources to remove both first and second barriers to learning.

A Closer Look at Video

"The Power of Propaganda" lesson shows exemplary practices in the inclusion of accessible video as a multimedia resource for learners. The videos themselves support a number of accessibility features, including:

Closed Captions. These provide audio information visually (as text) for learners. Not only can these assist those with hearing difficulties, but the captions can also help learners with limited vocabulary for this topic, as well as English Language Learners. Studies show captions increase all learners' comprehension and retention (Linebarger, 2001; Evmenova, 2008).

Keyboard Accessibility. The video player can be controlled with a number of simple keyboard shortcuts. For instance, with shortcuts you can play/pause the video, skip forward/back, adjust the volume level by 10% increments, and even start a full-screen mode to remove the distractions from the rest of the page. A control for slowing down the rate of the speech and video is helpful for those learners who process

information at a different pace (or who just want to speed up the speaking rate to consume the content when they have limited time).

Transcripts. A transcript of the video makes the information accessible to someone who is both blind and deaf and who could then use a refreshable Braille display to access the information. Transcripts are also useful for those who prefer to read information or need to reference the information contained in the video quickly.

Translation. Perhaps the most difficult at this time is providing material in alternate languages. Although sometimes a video is available in other languages, often these resources need to be individually researched and sourced. Translating transcripts is much easier, and learners and families themselves may be able to perform the translation into their preferred language using free tools such as Google Translate and Microsoft Translator.

At the Shallow Swim level, it's important to introduce students to the concept of accessibility as the first step toward advocating for themselves and allyship for those for whom barriers exist. A good place to start is to review the video resources for the propaganda lesson with students and discuss their accessibility features. Together, define the standard for what constitutes a highly accessible video resource. As you explore the inclusion of captions, transcripts, keyboard accessibility, and translation, ask students if this feature might benefit them. Use our review to help guide the conversation. The goal is for every learner to recognize that every resource has a barrier, and as an individual their use of accessibility features may move up and down a continuum: from essential to preference.

As students gain understanding of what makes a resource highly accessible, together investigate other resources, including print (often inaccessible to screen readers when a PDF is in picture form), interactive websites (often inaccessible to keyboard control and screen readers), and regularly used tools, devices, or apps (often built with inaccessible or missing features). Or take the time to dive deeper into the accessibility features of the platforms and programs frequently used in your classroom, such as those from Apple, Google, or Microsoft, as their key accessibility

features are often overlooked with only cursory use. This might include the use of:

- Google Translate to create copies of articles or transcripts in other languages
- Microsoft PowerPoint where students use the text-to-speech features to help craft and edit their message and then use the built-in real-time caption and translation feature for presentations
- The many built-in accessibility features in Apple products, including VoiceOver, Speak Screen, Dictation, and more.

The above exploration could be part of an amazing inclusion unit focused on an essential question: How does accessibility influence and impact equity, inclusion, and learning? However, given the pace of many curricula, this deep dive may not be possible. Alternatively, we suggest you encourage ongoing conversations about accessible materials by embedding discussion into the "metacognitive" aspects of your lesson. Any time you use a resource or tool (or want students to use), discuss how the accessibility features (or lack of) support you. When possible, discuss how, depending on the task or your changing learning needs, your accessibility needs might change too.

For example, Kendra, by preference, includes the use of captions in videos and movies. Although she doesn't require captions, she finds she has better comprehension when she includes them (and the research supports this). When she has highly detailed material to read, or if she is, say, writing a book, she requires the use of text to speech to help her manage her ADHD and focus on the content. Luis often uses screen magnification, a high-contrast view, and other display settings for part of the day and then switches to text to speech later in the day to address eye fatigue. He also uses a combination of human narration and computer-generated voices depending on the type of content he has to read. For fiction and other content that has a more narrative structure, he has found that the human narration in audiobooks works best for focusing and holding his attention. For other content, text to speech with sentence and word highlighting works better for him.

Pause and Reflect

Tie a Shoelace in Two Seconds

Here's an eye-opening activity to use with other educators or your students to further the discussion about accessible materials, the tools and scaffolds learners might need, as well as the preferences they have for learning. It works well both in person and online.

Begin by scanning the QR code to watch a video on how to tie shoelaces in two seconds. You won't believe how simple it is!

Watch the video once, and then answer the following questions:

- Could you master tying your shoes in two seconds using the video?
- How did you feel about your (in)ability to do the task?
- Were you able to understand the instructor?
- Did you use (or need) captions to better understand the oral instructions? Did the auto-generated captions help you?
- Were the "slowed down" instructions helpful?
- Did you need to watch the video more than once?
- What other additional resources, materials or support might you (or your students/others) need to reach mastery?

It's important to note that the video uses automatically generated captions. These captions continue to improve as speech-recognition technology becomes more accurate, but typically they lack proper punctuation and other elements of quality captions. Although you can't improve the captions for videos accessed online, video hosting services such as YouTube provide an option to edit captions for videos you or your students create, which will make them easier for everyone to understand.

Sharing this type of anecdotal information with students opens the door to openly talk about learning needs. It recognizes everyone has a "jagged learning profile" (Figure I.2). It shows students they can both advocate for their own needs and for the needs of others. The goal is to make

accessibility non-negotiable. Engaging students in the process of defining and sharing (and eventually finding and creating) accessible resources and tools, is one way to include them in the creation of a UDL classroom with you. They'll recognize and live inclusion as you work together to create an all-access pass.

You may decide to explore the "Next Steps" section at the end of the chapter to apply (and share with us) what you've learned or continue to the final section in this chapter to explore how environmental design impacts instructional design.

Deep Dive: Environment—Physical/Virtual

The final area of focus for this chapter is the classroom environment, which is often called "the third teacher" and discussed in a book of the same name (OWP/P Cannon Design Inc., VS Furniture, & Bruce May Design, 2010). This concept recognizes that our virtual and physical spaces can either enhance or detract from learning. In the next few pages, we'll focus on the ongoing co-creation of learning environments that work for everyone. To provide context, we'll use middle and high school classrooms where changes are often challenging. At the Deep Dive level we'll focus on three actions:

- Provide a variety of flexible seating areas that can change with need.
- Allow students to configure the classroom as a collaborative task.
- Continue to expand the use of centers. Include opportunities for higher-order thinking, answering essential questions, exploring and mastering concepts, designing to solve problems, and so on.

Beyond Rows to Flexible Learning Spaces

At the Deep Dive level, you understand the difference between the terms *decorate* and *design*. Both can have positive effects. *Decorating* focuses on the final details. In your home, this is the art, rugs, and accessories you add to show your personal style. In your classroom, it's the bulletin

boards, posters, and seasonal decorations. Decorating creates a welcoming environment and lets students know you care about the space you'll share together. *Designing* focuses on function. In your home, it's the placement of furniture to maximize your use and enjoyment of the space. Many people never change their floor plans once they settle in. If you worked from home during the pandemic, however, the need to include a new work space (or two) probably required rethinking the use of your space. Furniture may have been added or rearranged to fit your needs. In the past, classroom design was much like the floral couch in the formal living room: Set it, and forget it. Classroom design needs to continuously evolve, focused on optimizing students' physical, social, academic, and emotional well-being through the flexible placement of furniture, materials, and resources. It is based on the varied needs of the learner, changing as their needs change. Providing options for comfortable seating, individual and group work, and spaces to relax is an excellent first step to empower learners and optimize learning.

Given the prevalence of rows in the typical middle or high school, you may feel limited in what you can change even when you know this type of arrangement is outdated. If you are in a shared space, consider including the other educator(s) in your discussions and exploration of UDL. This will help expand the inclusion of UDL principles beyond your practice. If they are resistant to change, however, you may have to find portable solutions. Involve students. Ask them to help you determine strategies to set up (and put back) the classroom. As their understanding of UDL and themselves as learners grows, you may be surprised at the strategies they come up with to create a more flexible learning space (Figure 8.4).

Figure 8.4 Your classroom design is speaking to your students. What is it saying?

Tweet: At one time the teacher set and controlled most of the classroom management, routine, and culture. Today, the goal is for our learners to help you co-create the learning environment. #DiveIntoUDL

Flexible Learning Environments

COVID-19 has expanded classrooms to virtual settings. Indeed, as more and more schools return to physical settings, there is a definite increase in hybrid and fully online learning. We have an unprecedented opportunity to leverage the best that both environments have to offer for learning if we are able to resist the temptation to return to "normal." We must not ignore the lessons learned during the emergency shift to remote learning.

Many educators who had avoided technology previously were pushed outside their comfort zones, and in the process, they picked up valuable tech skills that they—and we all—can now use to make face-to-face learning more accessible and inclusive of all learners. For example, the use of breakout rooms in online class meetings provided additional opportunities for shy learners who would not typically speak up in the classroom to have their voices heard. Similarly, the recording of content to support at-home learning should not be discontinued just because schools are open for in-person learning. Such recordings could support learners who have to miss time due to illness or other circumstances.

Creating more flexible learning environments that support learner variability should now be the default, not the exception. When in-person learning is disrupted by things such as COVID, natural disasters, or weather-related school closures, flexible learning environments that incorporate online and hybrid options provide a more agile education system that is better prepared to address the challenges of our uncertain future—the future we are preparing expert learners to live and thrive in.

Classroom Design Inspirations

Before working with your students to help you (re)design the classroom, review the excellent resources available via the QR codes.

Simulation: UDL High School Classroom

The first is the 360 UDL Classroom. This interactive tool will give you a variety of ideas to support your varied learners and give them independence to make choices within their learning environment. To use this site, use the zoom feature to ensure the popups are in the correct location. Hover over the dots to learn more; click to see an example.

Even an exciting tool like this, however, can be disappointing if it creates a barrier for some, and as Luis noted, 360 UDL Classroom is not accessible to all. While we could have provided a text version of the content to make it more accessible, that wouldn't have been very engaging. Because looking for additional resources that provide a similar experience is always a good idea, we instead offer you two additional video resources.

The first alternative resource is a video from Understood.org called "Seeing UDL in Action in the Classroom." At first glance, the video's example classroom contains a lot of technology and manipulatives available, which may seem out of reach for some schools. Instead, focus on the *configuration* of the classroom, how different areas are used, the options for seating (or standing), and what centers or stations you can see. What we liked about this video, beyond the flexible classroom design, was the flexible thinking behind it. As fifth-grade teacher Eric Crouch says in the video,

Seeing UDL in Action in the Classroom

> Everything about our class is designed around our students and their desires. By working to better understand each other not only does it build community, but it helps solve the needs of those learners. So being flexible is again more than about just where the kids sit and how they sit, but it's about a mindset. Of saying, I'm willing to allow my kids to explore this because it might be better for them than what I could think of. (As quoted in Neurodiversity Resource Center, 2021)

The second video resource, "Classroom of the Future at Chimo Elementary," showcases the design and instructional changes seventh- and eighth-grade teacher Jennifer Strickland and her class implemented. It will give you a plethora of ideas to help you build in active ways for students to take ownership of their learning. You may not have access to all the technology options shown in the video, but some of the low-tech ideas, such as the variety of whiteboard surfaces, are doable in most classrooms. Beyond the tools, what struck us was the learner expertise of the students, working purposefully and collaboratively within an unstructured yet focused environment. This is UDL in action.

Classroom of the Future at Chimo Elementary

Figure 8.5 The traditional classroom is a very structured, but not necessarily effective, learning environment.

To shake up the physical layout of your classroom, show students a picture of a very traditional classroom, such as Figure 8.5, and discuss why they think the typical classroom is designed this way. Then ask: Who does this design work for? Be prepared for the answer to be: the teacher.

Have your students share the problems they see in the traditional classroom floor plan. Discuss changes to the environment that might help learners focus, feel comfortable, or support the different ways they learn. After you've shared ideas, ask students to help you create a flexible learning environment (even if you already have a flexible setting, there's always room for improvement). To help spark ideas, you may also want to share the 360 UDL Classroom example. We recommend this as a teacher-led activity to help eliminate the built-in barriers.

Depending on their understanding of executive functions and their learning needs, do a Thumbs Up/Thumbs Down activity as you examine the different areas of the class, read the accompanying popups (hover), and explore the examples (click). Ask questions such as: Would this area or design support your learning, focus, planning, motivation, and so on? Would you be able to use this area and its tools independently, or would you need support? Then, have students turn to a partner to discuss their reasons for the thumbs up or down, as well as alternatives or additions that might better support them as learners. Point out technology options that include "assistive technologies" to ensure they are recognized as an important part of the design (UDL guideline: Options for perception and Options for physical action). In a class discussion, create a list of suggestions or draw a classroom map outlining changes. Or, consider having students design their ideal classrooms by drawing, writing, or recording their ideas with an explanation of how the changes would support them. Some examples are a relaxation corner to go to when they feel anxious, stressed, or in need of a quiet place to read; the option to stand (and move freely) to help them focus as they record their ideas on a large whiteboard

or table; and the option of headsets to block sound or listen to music to help with concentration while they work.

Regardless of how the ideas are collected and shared, implement some of the suggestions. Through observation and student reflection, observe the impact on learners, the effect on classroom routines or rules, and their value to support the UDL principles of Engagement, Representation, or Action and Expression before determining whether to make the change a permanent part of the classroom environment.

Beyond Your Classroom

One of the goals at the Deep Dive level is to share UDL with other educators. As you and your students work to improve the classroom environment, consider inviting other teachers to visit, or perhaps use a shared planning time to take a group of interested teachers through a similar activity as above. Help them envision the best qualities of a play-based kindergarten classroom: an inclusive space that encourages inquiry, hands-on exploration, shared learning, and choice, one that continues to evolve as learners grow and develop. Although a tenth-grade class might not need a sand and water table, discuss with other educators the takeaways from kindergarten they could apply to their classroom and the benefits these changes would make for the diversity of learners that walk through the door.

Designing Virtual Spaces

Unlike the physical classroom where the evidence of how design impacts learning is right in front of us, online spaces often have many hidden barriers that negatively impact all aspects of learning: physical, social, emotional, and academic. It's important to create a safe environment that recognizes and helps learners regulate their emotions, especially feelings of isolation, confusion, and loneliness. It takes careful planning to ensure your online space is easy to use so students know how to ask for help, where to find resources and support, and how to find and build community.

One way to optimize your online learning space is to follow visual design principles. Web designers know how important user experience (UX) is for people to successfully use a website. The goal of UX design is to create a smooth, seamless experience enabling visitors to easily navigate a site and quickly find what they need. In the field of online learning design, this same principle is referred to as *learner experience* (LX). Just like UX, LX focuses on reducing the "drag" of poor design (Peters, 2011). This drag causes friction (a term borrowed from web design), meaning "... anything that prevents a (learner) from reaching a goal."

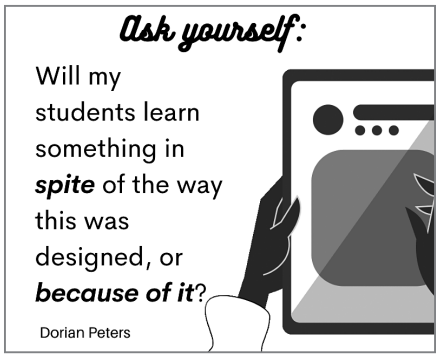

Figure 8.6 Educators are instructional designers; few are visual designers. Ask yourself (and your students) where are the visual, navigation, and learning barriers in our online classroom?

If you've ever taken an online course or even tried to navigate a poorly designed website, the experience can leave you frustrated. The more friction you encounter, the more likely you are to leave. In online classrooms, many students who experience friction do indeed leave or mentally check out, at least. We may never know at what point our students are no longer participating or learning. This is why we need to continuously update and refine our online learning spaces. Ask yourself: Will my students learn something *in spite of* the way this was designed or *because of it* (Figure 8.6)? Seek feedback from your students. This models both a growth mindset and an iterative approach to mastery. We may not know how disengaged learners are or how much they are struggling unless we ask. As you update your online classroom, let students know why you are making the change and how you think this will improve learning.

As you create your online classroom, ask yourself the following questions to reduce friction so that learners can focus on what's important:

- Is my main page designed so students can easily navigate and find what they are looking for?
- Is my main page simple yet fun? Do I need to remove unnecessary elements—perhaps put them on another page—to eliminate distractions?

- How do I emphasize the social-emotional aspects of my classroom?
- Do students know to connect with me for help or support?
- Is my classroom page (or LMS) accessible?
- Are all the materials (PDF, videos, interactives, and so on) accessible?
- Will my students learn something in spite of the way this was designed or because of it?

A Minimalist Approach

Create a Bitmoji Virtual Classroom

While few of us have a visual design background, we can reduce friction by focusing on simplicity and minimalism. Keep your pages clean (white background, black text, and one additional color) and avoid clutter. A busy page is often confusing and overwhelming. Just like your physical classroom, place design before decoration. For example, in this excellent instructional video by Danielle Monock, "How to Create a Bitmoji Virtual Classroom Using Google Slides," it is easy to get caught up in the fun of decoration. Before you worry where to put the couch, consider the LX. Reduce friction first. Ensure navigation is clear, the page is organized, and links are accessible. Once this is done, add in your Bitmoji (and cat) to personalize your page and engage your learners.

Classroom Centers or Learning Stations

Another way you can deepen your commitment to creating a UDL environment and continue to build out flexible learning spaces is by introducing or increasing the use of learning centers or stations in your classroom. Centers are designated areas within the classroom where students can go to engage in more self-directed activities for a variety of reasons, including introduction to a topic or concept, exploration of ideas or materials,

practice and review, or enrichment. Centers are not only for students in the early grades. They are an excellent way to gradually release responsibility for learning to students of all ages because they allow for freedom of choice (and movement) within a structured setting. Centers also help you move away from a lecture-centric classroom, where you speak at the front and learners take notes.

Ideas for Creating Learning Centers

You can introduce or expand the use of centers in your classroom in a variety of ways. The middle school examples that follow can be easily tweaked to accommodate different grades and/or experience levels using learning stations. To introduce students to the use of centers, create simple resource stations that include the materials they may need or the technology they will use to help them research a topic, try out a solution, gain deeper understanding, or create a physical model. This might include print resources, computer or iPad stations, materials for building or creating, and a listening/viewing center.

Another approach is to introduce a series of centers through which students explore various skills related to a single subject, such as math. Students can watch videos at some stations and use math manipulatives (both physical and virtual) to practice a skill at others; all combine to help students develop mastery over time. Imagine giving students more time to explore and practice difficult math skills! Or, the centers could each explore a different step in a single process, such as the research cycle or design thinking.

Consider creating an essential-question center with materials and interactive resources to help answer the question at hand. This type of center might align with the current topic of study or focus on student-generated questions. Each time the question changes, say monthly, take time to debrief and share insights gained before introducing the next question.

Finally, consider creating a teacher-led center where students find additional support and scaffolding as well as the option to talk through an idea or concept. Invite every learner to meet with you in this center. This gives you 1:1 time with students, reduces the stigma of a "remedial" center,

and helps learners recognize that advocating for their needs and seeking support is an important skill.

We know the classroom environment is often more difficult to control in middle and secondary school than in an elementary setting. You may share your classroom space with another teacher, or you may rotate from room to room. Don't allow the physical limitations of your classroom to prevent you from making changes. At the Deep Dive level, your goal is to reach out to others to share UDL practices. Consider working with other teachers who share the classroom with you and together find ways to bring learning stations into their instruction too. If this isn't currently possible, create portable centers, ones that can be put away in a tote and stored at the back of the classroom or moved from room to room. Invite your learners to help you problem-solve how to include centers in a rotation timetable, making the discussion part of their ownership and accountability of the centers.

National Library of Virtual Manipulatives

Chrome Music Lab

Free Gizmos

Bomomo Art Application

Tips for Creating Online Centers

Centers are effective in an online environment with careful planning and an understanding of their limitations. You may need to take more time establishing routines and expectations, as well as be prepared for task completion to take longer, at least initially. Centers are best introduced after students understand how to work collaboratively, ask clarifying questions, and find resources in their online classroom. Once they have this foundation, you can set up learning stations in much the same way as the classroom. Use breakout rooms for discussion, collect collaborative ideas in shared documents created with Google Docs, and support individual responses through forms created with Google Forms. The one big drawback of online centers is the lack of concrete resources, important when students explore math concepts or in the design and creation of models or experiments in science. For many students, access to concrete resources and materials at home may be limited. Never assume these materials are easily gathered. Instead, seek out and provide links to virtual resources such as the National Library of Virtual Manipulatives (math), Chrome Music Lab (music), Gizmos (science), and Bomomo (art) to name but a few. (Scan the QR codes to learn more.)

Keep in mind that many of these sites are often inaccessible to some students. As we discussed in the propaganda lesson (Figure 8.3), every resource and tool has a barrier. Always take the time to review all resources—but particularly interactive resources—for accessibility, as the excitement of finding a "perfect" interactive for your lesson can blind you to some of its limitations for your learners. Basing a lesson around one cool tool can be problematic if some students can't access it for whatever reason. Note too that not every site or app may meet the security requirements of your district. It's important to follow district restrictions. In some cases, your district may purchase or compile resources for you, which can save you time. At the Deep Dive level, you may want to take the opportunity to review these sites and tools (or volunteer for the purchasing committee) and help further the discussion around accessibility and equitable access.

Pause and Reflect

At the middle and high school level (perhaps at every level), you may say: "I don't have time to change up the environment or have lengthy discussions about centers in the classroom. I have to teach the curriculum." While this may be true, we know that rows and lectures support efficiency but they don't necessarily support learning. For your short-term goals, think about the following questions to help determine how to continue to create a UDL environment:

- What are the barriers in your classroom/school? Who can you involve in a discussion about change?
- Are there any role models to support your vision? This could be a teacher you know in the school, district, or online.
- What are some strategies for quick changes (to help you get started) that can quickly be put back at the end of a lesson?

Continued

- Can additional furniture or totes (for centers) be purchased to support your design? Perhaps learners can make suggestions for these additions.
- How can you communicate your design changes (and the reason why) to parents and the community to garner support?

At the Deep Dive level, the long-term goal is to help others to embrace a UDL mindset. Consider the following questions if you're ready to move forward as a champion of UDL:

- Who do you need to influence to bring about more changes?
- How do you regularly share with colleagues what you're doing in your class and the positive impact it is having on learning?
- How do you regularly share with parents?
- How do you share some of the obstacles related to the environment (because of shared space or resistance to change) and look for proactive ways to address them?
- How can you involve your students, giving them opportunities to share with others their role in the classroom design (both physical and online) and the impact changes have on their mental health, engagement, and learning?

Ultimately, giving students a say in the design of their environment and recognizing the importance of flexibility, accessibility, and variability in its design models UDL in action. In fact, we can't think of a better dive into UDL than having students design the classroom setting (both in person and online) based on UDL principles and their growing awareness of their learning needs.

Next Steps

Throughout this chapter, we've shared a variety of ways to implement UDL at the Wade In, Shallow Swim, and Deep Dive levels. You may have thought of different activities, materials, or tools. Terrific! The goal is to provide you with examples and ideas, not step-by-step instructions.

Regardless of your next steps, we hope you will share your learning with us. This might be your reflections, aha moments, or examples of "before and after" classroom changes. How and what you share is up to you—here are some ideas based on the content in this chapter. Tell us:

Wade In

- How you separated the goal from the means from some confounded instructional goals. Talk about the barriers you removed.
- Examples of student-friendly goals and how you and your students worked together to create them.

Shallow Swim

- About the resources you and your students made/collected for a recent unit of study. How are they accessible?
- What you did to remove cultural barriers in the selection of paper-based and online resources. What changes did you note?

Deep Dive

- How you and your students changed the design of your classroom and how this improved learning, emotional regulation, inclusion, and so on.
- How you redesigned your online class to remove friction. What did you improve and why?

Dive Into UDL Website

Remember, for more strategies specific to your interests and your students' needs, you can review the UDL Planning Guide (under the Book Resources tab) on the book's companion site by scanning the QR code.