Design and Deliver

Planning and Teaching Using Universal Design for Learning

by

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ABOUT THE AUTHOR

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2 THE VOCABULARY AND MYTHS OF UNIVERSAL DESIGN FOR LEARNING

> Using the UDL framework made it possible for me to do a better job at what I was doing, but to make it so that students could find a way to connect differently than they had before with their learning experience.
>
> —Rhonda Laswell, former science teacher, middle school; Coordinator of UDL

Sometimes we need language to define what we already know. Sometimes we need language to consider new things. Universal design for learning (UDL) does both. You have already been introduced to some of UDL's vocabulary, such as *principle, guideline,* and *checkpoint.* You have been introduced to the brain networks, and that those networks are called the affective networks, the recognition networks, and the strategic networks. I've referred to UDL as a framework, and there are additional terms that are often used with UDL that are worth defining. These terms bring together large concepts, so they can be challenging to understand if you don't have some basic knowledge. When UDL is talked about, teachers will hear terms such as *framework, learning environment, flexible resources, the lesson goal, access, barriers,* and *learner variability.* In the next section of this chapter I list the terms, give descriptions, and provide some examples.

FRAMEWORK

UDL was not designed to be complex, but because it is a framework and not a checklist, some might find it overwhelming. In Chapter 1 I described the concept of a framework. You can also think about a framework as a three-dimensional box. Within that box are the results of the research CAST has discovered and performed, all of which uphold the principles, guidelines, and checkpoints within the framework.

Another example is a building. When a building is going up, the building is framed by steel girders. It is on that frame that the roof will sit and the materials for the walls will hang. If the framework is not solid and shifts, then the roof could fall in or the wall materials could crack. That building's framework is tested over and over by gravity and the use of the building.

The framework of UDL, designed by researchers at CAST, was conceived using brain research (Rose & Meyer, 2002). That research was grouped into the three broad principles and then into nine guidelines. Further review brought the checkpoints to life (see http://www.udlcenter.org/research/researchevidence/). Just as a

structural framework is tested by gravity, the UDL framework is tested by CAST's continuous review of the research and teachers' daily use and investigation.

LEARNING ENVIRONMENT

As mentioned previously, teachers use the UDL framework to design both lessons and the learning environment. In Chapter 1 I introduced the concept of the *learning environment* as your teaching space or location. When most of us think of teaching, we think of being in a classroom. We think of a specific location. UDL asks us to expand our concept of both where learning can take place and what needs to be available for learning to take place. A learning environment includes the physical location where learning is taking place, the resources available to the students, and the design of the lesson. To implement UDL, a teacher must go beyond the basic decision making of "what topic will be my focus for today." Instead, the teacher considers the environment in which the students will learn and uses the UDL framework to design that environment so students have access to the tools, resources, and strategies they need and so that they can achieve to their greatest potential.

The Physical Location

Think about a classroom as an example of a physical location. There might be desks and chairs, tables and chairs, or desk units. In most cases, these are mobile. Depending on the physical structure of the room, these can be grouped, placed in rows, or a larger shape such as a square or circle can be created. If there are students who use mobility devices (a wheelchair, a walker, or other assistive devices), a teacher wants to be sure these students have physical access to the seating and they are physically included within the larger chair and desk groupings.

Another piece underlying several of the guidelines and spanning all three of the principles is collaborative work. Students need opportunities to debate, discuss, negotiate, and challenge one another. Without these opportunities, they do not build important positive social and higher order thinking skills (Cohen, 1994; Schwartz, 1999). This is another way the organization of the classroom can affect your implementation of UDL. Students are more likely to collaborate if you create a physical environment that supports it.

A physical location can also be somewhere outside of the classroom. Maybe you've taken the students to a museum, the zoo, or your statehouse for a field trip. Maybe, perhaps like the example with Rhonda in Chapter 1, you've taken your students outside and into the school yard. Either way, these locations have become your new learning environment. To implement UDL, you need to consider why you chose that learning environment and how you will use that physical space in concert with the UDL framework.

Flexible Resources

The term *flexible resource* is a combination of two terms and can have multiple meanings. First, there is the overall term of *resources,* which is anything teachers or students use to learn about a topic. Resources can include printed materials (e.g., books, magazines), digital materials (e.g., online information, a DVD, devices

that speak, print, or otherwise work as a reader), or representative objects (e.g., a baseball, a diorama, a stuffed animal). That last category is the largest because it includes anything teachers might use to represent an object or a topic.

When a single resource is flexible it can be used in several different ways to demonstrate the same information. Using a hypothetical computer-based program as an example, let's say a student needs to read a story, but that student does not decode words well. The goal of the lesson is for the student to identify a story's characters, setting, and plot, and then predict the end of the story. Knowing that this student will spend time and effort decoding, and it is likely that this student will not meet the goal due to frustration and lack of time, the teacher sets up the computer-based program to read the story aloud. This allows the student to look up words that are unclear and gives the student the ability to use an on-screen highlighter to highlight the characters and words that identify the setting and plot, and then export that information into another document where the student can type up his or her thoughts on the plot and story predictions. Not only does this resource allow the student to hear the information, it provides writing and organizational supports. That is an example of a flexible resource because it allows the student to meet the lesson's goal while using that tool. This type of example would support the needs of English language learners, reluctant learners, and students who are not identified as having a disability but who struggle with reading. It's not as important to know why the student needs to experience this kind of flexibility; it's more important to offer the flexibility to all of your students so they all have access to learning.

Another way to interpret the term *flexible resource* is to consider how the resource itself can be repurposed or reformatted to meet the needs of the student using it. The National Center on Accessible Instructional Materials (http://aim.cast.org/) developed standards for publishers who create content files (CAST, 2012a). They are to use specific code that can be presented in different ways and styles. This means the file can be easily converted to Braille, large print, HTML, DAISY talking books, or talking books using a human voice to text to speech (CAST, 2012b). This policy applies to instructional materials published after July 19, 2006. These converted materials are available to students with print disabilities and students with low vision or blindness, but how these students qualify for these supports depends on their disability. That information can be found under Question A-3 at http://aim.cast.org/learn/policy/federal/nimas_q_and_a#students_eligible.

If you are a general education teacher, why is it important for you to know about National Instructional Materials Accessibility Standard (CAST, 2012a) and accessible instructional materials (AIM)? Isn't that the responsibility of the special education teacher? As a general education teacher, you will likely have students in your classroom that could benefit from access to these materials. And if you are implementing UDL during your lesson design and lesson implementation, then you understand how important it is for all of your students to have access to the learning materials they need. You also understand that you are part of a team of teachers who influence your students' learning. As a team member, you recognize that by working together, student learning and access to materials can improve. In addition, if you are part of a team choosing textbooks and other curricular materials then you can use this information to ensure that your students with print or vision disabilities can fully benefit from the materials. There are many strategies that have grown from AIM that every student can use. To see how AIM and these strategies have affected the lives of students, go to http://aim.cast.org/collaborate/knowledge/story and listen to students' stories.

The term *flexible resource* can mean something else. When the teacher allows the student to use a resource in a way that is meaningful to the student rather than requiring the resource to be used in a specific way, then the resource becomes flexible. Take, for example, base-10 blocks. These are three-dimensional plastic squares and rectangles that can represent mathematical concepts. Small, 1-centimeter by 1-centimeter squares can represent 1s. Put 10 of those together in a row, and you have a block of 10. There are also 10 blocks, which are sometimes different-colored rectangles that are the same height as the 1 block but look like 10 of the 1 blocks glued together. The 100 blocks are similar to the 10 blocks except they look like 100 of the 1 blocks glued together. These blocks can help students grasp the concept of decimals (e.g., the ones place, the tens place, the hundreds place), reducing fractions (e.g., a physical representation of the numerator and denominator to show how both can be reduced), and many other math concepts.

By definition, base-10 blocks can be a flexible resource. However, if the teacher always defines how the students must lay out the tiles, the resource loses some of its flexibility. The resource becomes so structured and rigid that some students cannot connect with them. For example, students are asked to demonstrate the number 123. If the teacher leaves open how the students represent the number, then the resource is being used flexibly. Students might stack their blocks, line them up like a train, group them according to 100s, 10s and 1s, or create a shape. How they lay them out does not necessarily determine their understanding. Instead, being able to tell the teacher or their student partner how they've represented the number catapults the students into a higher level of comprehension. We assume that because the student does not put a 100 block to the left, two 10 blocks in the center and three 1 blocks on the right that they do not understand the number 123. However, a brief conversation could show that the student organizes the answer differently but understands the concept. Underlying this example of flexible resources is the goal of the lesson. In this case, the students were asked to express 123 and base-10 blocks were one of the ways they could demonstrate that knowledge. The goal should always drive the lesson.

Obviously, the term *flexible resource* has several interpretations. The first example showed how a digital resource could become flexible if it supported the learning needs of a student who needed certain supports but not others. The second example discussed the ability for a print-based resource to be translated into whatever format makes it accessible to a student with a print or visual disability. The third example demonstrated how the teacher's interpretation of the resource's use made it flexible. All three of these examples depend on specific decision making by the instructional leader. Regardless of the interpretation you are using, how you design your learning environment determines whether available resources are flexible in your classroom.

THE LESSON GOAL

The goal is the heart of any lesson. All activities, resources used, and products produced should be grounded in that goal. A UDL goal has one quality: The "how" tends to be left out (Coyne et al., 2009). The goal should state what the students will learn, but when a teacher leaves out the "how," it leaves open the possibility of how the students will learn that topic. The same is true for lessons that include assessment. The goal might state that the students will be assessed, but it does not specify how the students will be assessed. To describe how the students will learn the topic or how the students will be assessed paints the teacher into a corner by limiting what resources will be

used and how they will be used. By leaving out the how, teachers have more flexibility during the lesson to meet spontaneous needs or needs that weren't previously known.

What if you teach in a school, district, or state that requires you to include a "how" within your goal? You can still provide that flexibility in your goal if you use the right verbs—verbs that are broad enough to allow for multiple tasks or assessment formats. For example, your initial goal might read, "The students will write three predictions about the character Wilbur in *Charlotte's Web.*" By using the word *write,* this limits the instructional tools to paper and pen or pencil. If the teacher is focused more on the students' ability to create predictions, then the teacher could use the word *establish* instead of *write.* Thus, the ways in which the students will show their predictions is left open.

If the teacher's lesson is designed to focus on the students' ability to write using paper and a pen or pencil (with the appropriate accommodations for students with disabilities), the character of Wilbur in *Charlotte's Web* is the secondary component of the goal. Wilbur is the topic about which students will write. Patti Ralabate (2010), from CAST, created a list of these suggested verbs (see Table 2.1).

Table 2.1. One hundred active verbs you can use to write observable and measurable goals

add	demonstrate	express	propose
analyze	demonstrate use of	follow directions	question
apply	describe	formulate	read
appraise	design	identify	recall
arrange	detect	illustrate	recognize
assemble	determine	imitate	reconstruct
calculate	develop	infer	record
categorize	devise	initiate	relate
choose	diagnose	inspect	repeat
cite examples of	diagram	interact	report
collect	differentiate	interpret	respond
communicate	differentiate between	list	restate
compare	discriminate	locate	review
complete	discuss	manage	select
compose	distinguish	modify	sequence
conclude	divide	multiply	solve
construct	dramatize	name	spell
contrast	draw conclusions	operate	state
copy	employ	organize	subtract
correlate	engage in	pick	tell
create	estimate	plan	translate
criticize	evaluate	predict	underline
debate	examine	prepare	use
deduce	experiment	present	utilize
define	explain	produce	write

From Ralabate, P. (2010). *Meeting the challenge: Special education tools that work for all kids.* Washington, DC: National Education Association; reprinted by permission.

The lesson goal is also driven by the standard. Discussed more in Chapter 6, with 45 states adopting the Common Core State Standards (CCSS) at the publication date of this book, teachers will have the latitude to use their professional judgment in how to design lessons to meet the standards. The National Governors Association Center for Best Practices and Council of Chief State School Officers (2010, p. 6) state, "The Standards define what all students are expected to know and be able to do, not how teachers should teach." The new CCSS will allow for multiple pathways to the learning as determined by the lesson goal.

ACCESS

Discussed earlier, access can refer to AIM and flexible resources. But access can also refer to a student simply being able to connect to the information being taught, and keeping the "how" out of the lesson goal or broadly defining the goal makes choosing flexible resources even more important. Underlying the selection of flexible resources are the broader concepts of access and barriers. Access considers how the students connect to the lesson, how the topic is taught, and how the students express themselves. Based on UDL, access means that

- students are given a reason to emotionally attach to the lesson;
- students know they will be given a variety of opportunities to use, watch, touch, smell, maybe even taste something that will help them understand the topic better; and,
- students will have multiple opportunities to meaningfully and successfully demonstrate that they understand that topic.

When students have access to the learning environment, the teacher has considered the physical location and the resources that are used to teach the lesson while designing the lesson.

A popular cartoon demonstrates physical accessibility and how it benefits everyone (see Figure 2.1).

By shoveling the snow from the ramp first, the building is instantly made accessible to everyone standing there. The cartoon suggests that the adult needs to change his mind set to view the ramp as a way for all students to access the building rather than as a specialized support specifically for students using wheelchairs. This same analogy can be used to describe accessibility during the lesson. Going back to the example with Anthony in Chapter 1, he offered his students a cartoon video about integers and a number line. For those students who needed to process that information aloud to fully comprehend it, that lesson was inaccessible. A quick "turn to your neighbor and together list two things you know about integers" would allow these students to begin talking through the concepts. Adding the opportunity for each group to share their two items and then writing those items on the board would allow students to continue processing what they spoke with what they hear. Anthony could correct students' inaccuracies before they began their practice. Suddenly, the lesson is accessible to more learners.