# CIDDL Research and Practice Brief 6 : Placing Universal Design for Learning at the Heart of Instructional Design

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# Guest Expert: Dr. Kavita Rao

Dr. Kavita Rao is a professor in the Department of Special Education at the University of Hawaii's College of Education. Her work focuses on placing the Universal Design for Learning (UDL) framework at the center of curriculum design to support all students, including students with disabilities as well as culturally and linguistically diverse learners. Dr. Rao is also interested in the intersection of technology, UDL, and online learning.

# Topic: Placing Universal Design for Learning at the Heart of Instructional Design.

### What will you learn from this Brief?

In this brief, Dr. Kavita Rao discusses the power behind intentionally applying the UDL framework when designing educational experiences for all learners. The process starts by considering the goals of a lesson, identifying barriers, then considering how UDL can help provide supports to meet learner variability. Dr. Rao goes on to discuss how this design cycle can be applied to evidence-based practices as well as for populations of culturally and linguistically diverse students. Finally, Dr. Rao discusses the intersection between UDL and online learning as well as how to use technology to support rural and remote teacher education.

### Context

The 2018 Strengthening Career and Technical Education for the 21st Century Act 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." The act calls upon states to prepare career and technical education teachers, faculty, specialized instructional support personnel, and paraprofessionals in the use of educational frameworks, including UDL, to effectively teach and provide accommodations for students from special populations, especially students with disabilities and English language learners.

The [UDL guidelines](), found on CAST's website, are intended to support educators as they design flexible curricula that help all learners progress toward their learning goals (Meyer et al., 2014). According to Myere et al. (2014), the foundation of any effective curriculum is to establish clear learning goals. Only once these goals are established can we begin to consider the assessments, methods, and materials that will be most appropriate for the learning environment. Standards, on the other hand, highlight what is valued within a society and, therefore, what teachers must teach. In order to create clear learning goals, teachers will be able to identify the central purpose of a standard. This requires separating learning goals from the means to obtain them, then restating the goals in such a way that they can be approached through a UDL lens (Meyer et al., 2014). In essence, academic standards describe "what" students should learn, while the UDL framework supports educators in thinking about "how" lessons can be designed to minimize barriers (Rao & Meo, 2016). Additionally, Rao and Meo (2016) offer a process by which educators can use the UDL framework to design standards-based lessons that address the natural variability found in any classroom. This process has two parts: unwrapping the standard and applying the UDL guidelines during the lesson planning process.


### Unwrapping A Standard

Rao and Meo (2016) explain that standards typically consist of two parts: what a student must be able to do (skills) and what students need to know (the concepts, knowledge, and background students will require). The skills are frequently represented by verbs within the language of a standard, while the concepts students must learn are more often represented by nouns or descriptive phrases. By breaking down a standard into its core components, teachers can better

understand how to develop a lesson that addresses the skills and concepts students must learn.

### Applying UDL to Lesson Components

In their 2016 article, Rao and Meo go on to explain how the UDL guidelines can be applied to reduce barriers in the four lesson components: the goals, assessments, methods and materials.

- Goals: Clear goals help teachers articulate the objectives of each lesson and how the lesson will tie into the broader academic standard. In addition, having a clear goal in mind will help teachers to identify the potential barriers students might encounter. UDL can then be applied to the development of the methods and materials that will be used in the lesson to ensure all students can meet their learning goals.

- Assessments: Assessments help measure if students are advancing toward mastery of the skills and content related to learning goals. The UDL guidelines can be applied to both formative and summative assessments by offering options in how a student demonstrates their knowledge or by providing opportunities for mastery-oriented feedback throughout the learning process. In the case of preparing students for standardized tests, for example, Rao and Meo (2016) describe a process by which teachers can provide support and practice throughout a unit that will prepare students not only for the content of the test, but also for the specific formats they will encounter.

- Methods: The UDL framework provides a multitude of strategies that support students with flexible and engaging ways to work toward their learning goals. Rao and Meo (2016) suggest that teachers ask themselves what supports and scaffolds can be incorporated into instruction to help their students acquire the content and demonstrate their learning. Supports can include offering students options for comprehension – such as alternative formats or language supports – whereas scaffolds can be incremental supports that can be faded over time as students achieve mastery of concepts. The key is to

provide options to support the perception, comprehension, processing, expression, and engagement of the range of learners in a classroom.

- Materials: When considering the materials for a lesson, teachers can incorporate both low-tech and high-tech resources, but it is important to align materials closely with the instructional strategies and supports that have been chosen. Furthermore, Rao and Meo (2016) encourage teachers to offer a range of materials and tools not only to the students who require accommodations, but to all the students in the class.

In this brief, Dr. Rao discusses the UDL framework as part of a design cycle that can help all educators – be they general or special education teachers – broaden their lessons to support all learners. At the heart of this process is recognizing the variability of your learners, be they individuals with disabilities, culturally and linguistically diverse students, or rural and remote teacher candidates, and then identifying the potential barriers to learning that might arise. Dr. Rao also discusses the ubiquity of assistive technologies in everyday devices and how these can be invoked to support all students by offering them choice and autonomy in their approach to learning.

## Key Insights

An essential premise of the UDL framework lies within its focus on the intentional design of learning experiences. Intentional incorporation of multiple means of representation, action and expression, and engagement helps ensure that the broad range of learner needs are met (Rao et al., 2017). As Cook and Rao (2018) indicate, however, teachers must balance opportunities for specialized instruction for students who have specific areas that need support while, at the same time, ensuring their access to the general education curriculum. The UDL guidelines can assist educators to incorporate supplemental, evidence-based practices (Rao et al., 2017).

> Kavita Rao: "I don't see the UDL framework as just a random menu of options, it's a very intentional menu of options. When you think about 'what is my

goal?' 'where are the barriers?' and 'how can I now use UDL to address those barriers?'"

Kavita Rao: "With an evidence-based practice, you may have the core components that you are going to do for the EBP, but you can consider the other factors around that that might make the practice or the intervention that you're doing more suitable for the environment… It's not really an add on so much as a way to think about what you're doing and how to make it work for the learners that you're working with."

Cook and Rao (2018) suggest applying the UDL guidelines to a chosen intervention to meet the student's needs while also maximizing student engagement by considering their strengths and interests. This can be done in two ways: by applying UDL adaptions to the core components of the practice, or by maintaining the core components but by adding supplementary components that will enhance the experience for a targeted learner (Cook & Rao, 2018). The UDL framework also provides a useful structure through which teachers can examine new and emerging digital tools (Rao et al., 2021). Today, many common digital devices, including tablets and smartphones, have built-in features such as text-to-speech (TTS) and speech recognition (SR) that can benefit learners with and without disabilities (Ok & Rao, 2019).

Kavita Rao: "I encourage the teachers that I work with to develop lessons where all students get to experience using the annotation feature, the highlighting feature, text to speech, whichever features that you're using… It also empowers students to know that 'hey, this works for me, I really like this' and there are some kids who might want to use text to speech   some days, but not other days. And that's perfectly fine."

The UDL framework can also be extended to thinking about teacher preparation, especially with teacher candidates from rural or remote areas.

Kavita Rao: "Some of the things that I think are really important for teacher preparation in rural and remote areas is understanding the needs of the populations and the teachers that you're training in those areas… Because the

issues for rural and remote places are very different from urban schools and the schools where your teacher education facilities might be."

The key to meeting the needs of teachers in remote areas lies in the deliberate use of synchronous and asynchronous technologies (Rao et al., 2011). Rao et al. (2011) provide several examples of how web-based conferencing can help design positive instructional environments for remote learners. These include moving beyond the reliance on text-based materials to include multimedia formats, overcoming students' technological barriers, and using a variety of strategies to create a community of learners (Rao et al., 2011). These tips fall in line with the UDL framework by offering multiple means of representation (considering other formats of materials), action and expression (allowing students flexibility in how they demonstrate their learning), and engagement (by encouraging the formation of learning communities by breakout rooms or local meetups). Beyond considerations around students with disabilities or English language learners, teachers have to consider the individual attributes that impact how each student experiences schooling (Rao & Meo, 2016).

> Kavita Rao: "The beauty of UDL, as any of us who use UDL know, is that when you start planning with UDL, you start broadening out your lesson to support all learners. So that includes the students with disabilities, that can include your language learners, your culturally and linguistically diverse students."

## Resources

In her interview, Dr. Rao highlights a couple resources that may be of interest:

- [Using universal design for learning to design standards-based lessons,](#) an article that provides a step-by-step guide and examples of how to unwrap the core components of academic standards and use the UDL framework to develop flexible assessments, methods, and materials.
- [UDL for Language Learners,](#) a book that helps educators plan for the variability found in language learners and empower this population to achieve at high levels.

- [A Co-Teaching Conversation: Using Universal Design for Learning (UDL) to Plan Lessons Together for the Inclusive Classroom](), a book chapter that discusses how general and special education teachers can use UDL in the co-teaching process to ensure that both students with and without disabilities can engage in standards-based lessons.

## Link to Video

This Research and Practice Brief can be viewed on video online at https://tinyurl.com/4xybbv4k

## Suggested Readings

Cook, S. C., & Rao, K. (2018). Systematically applying UDL to effective practices for students with learning disabilities. *Learning Disability Quarterly, 41*(3), 179-191.

Meyer, A., Rose, D. H., & Gordon, D. T. (2014). *Universal design for learning: Theory and practice.* CAST Professional Publishing.

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Rao, K., Eady, M., & Edelen-Smith, P. (2011). Creating virtual classrooms for rural and remote communities. *Phi Delta Kappan, 92*(6), 22-27.

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Rao, K., Torres, C., & Smith, S. J. (2021). Digital Tools and UDL-Based Instructional Strategies to Support Students With Disabilities Online. *Journal of Special Education Technology, 36*(2), 105-112.

Torres, C. & Rao, K. (2019). Universal Design for Learning (UDL) for language learners. Monograph. Wakefield, MA: CAST.

## Transcription of Interview

Transcription of the interview can be found at https://ciddl.org/wp-content/uploads/2021/09/Brief6-Interview-Transcript.pdf

## For More Information

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