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Introduction

Much has changed both in society and in education in the decade since we published the first edition of this book, then titled *Universal Design for Learning: Theory and Practice*. Of course, advances in technology have driven some of this change. The increasing role that portable, digital technologies and social media play in every facet of our lives has also shaped new expectations for education. How we learn, what we learn, and why we learn have evolved with the times, as is always the case in education. Social equity issues have moved front and center at all levels across education. Artificial intelligence is a hot topic as we go to press and is likely to manifest itself in many weird and wonderful ways in the coming years.

Yet, in schools and universities, many learners are still being educated in standardized and uniform ways. Too many learners suffer from a lack of appropriate support, a lack of accessible methods and materials, a dearth of culturally appropriate content, and the stress and disaffection produced by all of these factors. These concerns appear in other learning environments, too: in job training programs, corporate professional development programs, informal learning settings, and more.

We believe that the Universal Design for Learning (UDL) framework, when applied with fidelity, will help improve the work of educators at any level and in any subject. A growing body of evidence supports that belief.¹² We have seen countless discouraged, unmotivated learners become successful at learning when given access to flexible environments that support their individual strengths and reduce barriers to learning. We have seen educators themselves become rejuvenated when obstacles to good teaching are removed by applying the framework's principles, rediscovering how important and satisfying their work can be when all of the learners they serve have genuine opportunities to succeed.

We hope this new publication will continue to stimulate genuine change and contribute to making optimal learning a promise fulfilled—not just for some, but for all. There have been many changes in the practice of UDL since its introduction by David Rose and Anne Meyer, but the framework itself remains based on three core principles that guide the design of equitable learning opportunities with:

- Multiple means of engagement
- Multiple means of representation
- Multiple means of action and expression³

Over the past few decades, the means for applying these principles have evolved as the science and experience of learning has continued to change. For example, CAST has updated the UDL Guidelines to take into account concerns about equity—socioeconomic, racial, cultural, gender, and more—and how these concerns affect learning design. We have led the UDL global community in developing tools to credential and certify individuals and organizations in UDL practices. The scope and availability of teacher professional development offerings about UDL from CAST and many other organizations has grown significantly in recent years. UDL is commonly included in university and teacher preparation courses, and international interest in the framework is flourishing, from Sweden to Singapore, Chile to Canada, and beyond.

This is progress. UDL can and must be a living concept that evolves through the ongoing interaction among researchers, educators, and learners. This book documents some of what has been learned and shares the latest ideas, exemplars, and models of principles in practice. The following sections highlight some of these developments.

THE PROCESS OF LEARNING

Universal Design for Learning is content agnostic. That is, the framework can be applied to any learning experience or setting, at any age, from beginning reading to advanced calculus to plumbing to a science museum curriculum. The primary focus of UDL is on creating opportunities for learners to internalize the process of learning itself, rather than any specific content, and thereby become competent and confident at learning itself.

Of course, in any given educational setting, the acquisition of knowledge and the mastery of particular skills is essential. Specific learning goals for individual progress are critically important to that end. However, these competency-based goals also need to sit in a larger context. The overall aim of education, at least as we see it, is not to learn particular skills or sets of knowledge but rather to develop knowledge and skills in the process of learning itself. As Albert Einstein famously said, “The value of an education . . . is not the learning of many facts but the training of the mind to think something that cannot be learned from textbooks.”⁴ Everyone needs to master the process of learning to open new vistas and opportunities throughout life.

Becoming a competent and confident learner is a process, not a fixed goal. Chapter 1 addresses this in more detail.

CONTEXT IS KEY

We need to recognize that disability is, by and large, contextual. We saw this during the COVID-19 pandemic, when some students who may have struggled in in-person environments—perhaps those who are less at ease in social settings—suddenly shone in the virtual environment, while others who may have been top performers in the school setting struggled in the online setting. From a practical viewpoint, anyone who is designing a learning environment can expect variability across learners and so should build experiences that are flexible enough to amplify natural abilities and reduce unnecessary barriers for most learners.

Of course, there will be outliers who may require on-the-fly individualization or innovative, tailored solutions. But by applying the UDL principles, educators can anticipate and plan for the variability of learners. And rather than seeing variability as a problem, we now understand it to be an actively positive force in learning for the group as a whole.

CAST’s early work focused on individual differences and each learner’s specific pattern of strength and weakness with regard to particular learning goals. That approach was limited in three ways. First, extensive analysis of each learner in multiple classes with large numbers of students was unlikely to be feasible. Second, the focus on the individual pointed in subtle ways back to the old medical model of disability or difference and inadvertently reinforced the concept of a

dichotomy between “typical” and “atypical.” And third, this approach suggested that students have the same “profile” regardless of context.

Advances in neuroscience changed that approach. They provided a different understanding of individual differences, characterizing them as predictable, normal variability that exists across the population.

Brain functions and characteristics fall along a continuum of systematic variability. Thus, differences are incremental, distributed, and dynamic rather than stable and categorical within an individual. This contradicts the idea of bright lines between an idea of normalcy and deviation from normalcy and challenges the practice of diagnosing and labeling individuals.⁵

In CAST’s current work, we emphasize that learning occurs in a dynamic interaction between student and learning environment, and that the learning environment, or context, is itself complex and dynamic. Think of a seed. You might first consider any seed as having a fixed or standard potential to grow. However, if you move that seed to Antarctica, does it still retain the same potential to sprout and flourish? This is one simple example of the impact of context on growth and learning.

Consider another example: the group dynamics of engagement. Engagement with a learning task depends on the provision of a sufficiently flexible curriculum so that each learner can find the right balance of challenge and support. Without support for sustained effort, persistence, and emotion regulation, even students who are momentarily excited about learning can become disengaged, losing out on deep learning. And when some students lose out on deep learning, everyone is affected. Active engagement with learning is gained through social processes. All students need alternative models of how to achieve a goal and a sense that the steps to get there are achievable. Engaged learners can model these different pathways for one another, but they need a flexible learning environment—the kind facilitated by UDL—to be able to do so.

It is therefore not only individual students that benefit from UDL, but the entire group of learners within the learning environment. When all students are actively involved in creating knowledge and establishing its value, the learning environment itself becomes more engaging for all.⁶

ENVIRONMENT: A NEW POINT OF EMPHASIS

In the previous edition, we defined “curriculum” as having four instructional components: goals, methods, materials, and means of assessment. CAST had been using this definition since as far back as the 1990s. Broader than the traditional definition of curriculum as a sequence of content conveyed by a fixed set of instructional materials, this view emphasizes how essential it is to be clear about instructional goals and to stay flexible about the methods and materials used to accomplish those goals. “Tight on goals, loose on means” is how a former U.S. education secretary, Arne Duncan, described his expectations of accountability systems, and that phrase aptly describes our aim for learning environments.⁷ The goals of learning become warped or thwarted when the means of achieving them are restrictive.

We showed how the wording of goals and standards can raise barriers to learning. For example, the goal to “write a story” constrains the medium to text, while the goal to “create a narrative” leaves the door open for any number of media. In both cases, the learner needs to understand and create the key elements of a narrative, but more diverse pathways enable more learners to succeed.

We also gave added attention to assessment, or the formal and informal measurement of what learners know. The most important kind of assessment, from a UDL perspective, is formative assessment. These kinds of assessments—check-ins, pause-and-think exercises, and other forms of reflection—play an essential role in guiding and redirecting learning toward the appropriate goal. They enable educators to adjust on the fly, making necessary changes to teaching methods and materials that can anticipate and avoid failing efforts. In the same way that the GPS in a car will use precise location data to map where we are on a particular trip and adjust the route accordingly, so too can ongoing assessments in a learning environment help keep us on track toward achieving a particular goal.

In this edition, we’re adding something new: In working with educators throughout the world over the past decade, CAST’s professional learning team has come to identify the educational environment as a critical fifth leg of the curriculum, one that must be intentionally designed for inclusive practices. The learning environment is the space, both actual and virtual, in which lessons occur. It defines the context for the cognitive and affective work of the learners. At its best, the

environment can provide predictable options and permanent supports that students can rely upon. For the learning environment to take on this central role in learning, it needs to be designed with the same care as the other core curricular elements.

Moreover, we need to work hard to foster norms and a culture of active engagement with the resources available in the learning environment. The learning environment is not just a classroom setting. A broader definition includes everything from digital tools and resources like learning management systems or digital textbooks, to the walls of the classroom, to the classroom resources, to the setup of seating, to the lunchroom and quality of meals provided, to the norms and expectations of the classroom and school, to the social environment, to the emails and other communications we send to families, to the resources available to families to support learning.

In online or remote learning settings, environmental concerns may include family support, internet service, and a set-aside space for learning. A purposeful approach to all aspects of the learning environment—at least those elements we can control and influence—is essential to creating greater opportunities for learner access and agency.

The norms and expectations we establish to shape the shared culture of a learning community are a key part of the learning environment. How can we establish norms and practices that reinforce a culture of growth and learning? How can we honor each individual learner and recognize the value of what their experiences, backgrounds, and cultures bring to the learning setting? Can we embrace and support the full range of emotional experience, including social emotions such as surprise, delight, frustration, pride, shame, satisfaction, and disequilibrium or uncertainty?

Research confirms that environmental changes can lead to physiological and psychological changes, including improved learning.⁸ This bolsters the case for designing flexible learning environments to welcome and accommodate learner variability. A stronger awareness of the importance of context produces a more nuanced and refined understanding of barriers to learning and what must be done to lower those barriers; we'll talk more about this in Chapter 3.

ACCESSIBLE MATERIALS AND PRACTICES

Since its founding in 1984, CAST has pioneered the design and development of accessible educational materials for people with disabilities. In the early days, CAST researchers worked with individuals who faced significant barriers to participating in learning environments—people with cerebral palsy, Down syndrome, blindness or low vision, as well as so-called “high-incidence” disabilities such as dyslexia and ADHD.

Over time, CAST took on a significant role—with funding from the U.S. government—in developing standards for making and distributing accessible educational materials.⁹ Accessibility is foundational to UDL. In our prior edition of this book, however, that message was muted, in part because we were focused on ways that UDL could have an impact on other aspects of education design and practice. In Chapter 4 of this edition, we return to the discussion of accessibility as foundational. What is good for some is good for all.

CHANGES IN WHERE AND HOW UDL APPEARS

Throughout this book, and especially in Chapter 5, you’ll learn more about the many places and the many ways that Universal Design for Learning is being used. There are numerous examples of applied research using the UDL principles; even a cursory review of scholarly articles with the keywords “Universal Design for Learning” or “UDL” turns up a remarkable breadth of interests and explorations. Here are just a few examples of topics you might find discussed:

- UDL and video games in middle school
- UDL in online college coursework
- A UDL approach to special education and distance learning
- The application of UDL in Kuwaiti inclusive classrooms
- Library instruction and UDL
- Graduate students and teacher preparation (UDL)
- Application of UDL to surgical education
- Elementary students with intellectual disabilities—how UDL can help
- UDL and linguistically diverse learners
- Flexibility in formal workplace learning through the UDL lens
- Inclusive preschool with UDL

The increasing focus on UDL has been a global phenomenon. Vibrant explorations of UDL in practice are occurring around the world: in Ireland and the UK, Sweden and Spain, Italy and Portugal, Turkey, Singapore, Japan, and South Korea. Across Canada and South America, educators are adopting UDL as a means of guaranteeing more inclusive learning opportunities for all. UDL initiatives have sprung up in Australia, Africa, and the Middle East. International organizations such as UNICEF, UNESCO, and USAID have brought UDL into their planning and preparation efforts.

Interest in UDL in professional development and professional learning has expanded exponentially over the past decade. CAST's own Professional Learning team has grown tenfold in annual revenue—and much more, we think, in influence—since 2014. With statewide initiatives in New Hampshire and California, CAST is mapping out routes to wide-scale implementation of UDL in both general and special education settings.

At the same time, CAST has put significant effort into building capacity to support workforce training and career/technical education. With support from the U.S. Department of Labor and others, we have been able to explore the ongoing preparation and maintenance of a skilled, talented, and motivated workforce through a coordinated investment in individual skill development and capacity building in schools, organizations, and communities.

UDL has been defined and provided for in all the major U.S. education legislation and federal technology plans. Since then, many states have also adopted UDL to support inclusive learning in K–12 education, higher education, educational technology, and workforce development.¹⁰ You'll learn more about these efforts in Chapter 5, where we highlight some examples of the thousand flowers blooming in the UDL field.

Universal Design for Learning is an evolving framework that depends on the contributions of its practitioners, researchers, and advocates. Share your opinions, both on this text and on how you see UDL being used in the world. We want to hear from you. We want to have your voice in the conversation. Email publishing@cast.org with thoughts, suggestions, critiques, and resources. We'll be sure to take them into consideration.

Notes and References

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- ⁹ Learn more about CAST's leadership in accessibility at <https://aem.cast.org>.
- ¹⁰ For updates on UDL in public policy visit <http://www.cast.org/impact/udl-public-policy>.