

Unpacking Universal Design for Learning

Unpacking Universal Design for Learning

Transforming Instruction
for All Learners

Patti Kelly Ralabate
Peggy Coyne

CORWIN

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Contents

TABLE OF FIGURES	ix
FOREWORD Dr. Anne Meyer	xiii
PREFACE	xvii
WHY DID WE WRITE THIS BOOK?	xvii
WHO SHOULD READ THIS BOOK?	xvii
OUR GOALS	xviii
YOUR GOALS	xx
KEY TAKEAWAYS	xx
IDEAS TO PONDER	xxi
FOR YOUR BOOKBAG	xxi
ACKNOWLEDGMENTS	xxiii
ABOUT THE AUTHORS	xxxiii
UNPACKING WHO WE ARE	xxxiii
1 THE BRAIN AND UDL	1
DEFINING UNIVERSAL DESIGN FOR LEARNING	1
THE THREE SETS OF BRAIN NETWORKS	1
UDL PRINCIPLES MAP UNTO BRAIN NETWORKS	2
STARTING ON THE SAME PAGE	4
CONCEPT 1: THREE BRAIN NETWORKS PROCESS SIMULTANEOUSLY	6
CONCEPT 2: BURNING GLUCOSE WHEN WE LEARN	8
KEY TAKEAWAYS	11
IDEAS TO PONDER	12
FOR YOUR BOOKBAG	12

2	DESIGNING UDL EXPERIENCES	15
	CONCEPT 3: LEARNER VARIABILITY	15
	DESIGNING FOR LEARNER VARIABILITY	15
	GOALS	16
	ASSESSMENTS	16
	METHODS	18
	MATERIALS	18
	LEARNER AGENCY	18
	DESIGNING FOR LEARNER AGENCY	20
	MS. JACKSON'S LUGGAGE PROJECT	20
	CONTEXT AND LEARNER VARIABILITY	22
	CRITICAL VALUES IMPACT LEARNER VARIABILITY	24
	REFLECTING WHO LEARNERS ARE	25
	DEVELOPING A SENSE OF BELONGING	26
	KEY TAKEAWAYS	27
	IDEAS TO PONDER	28
	FOR YOUR BOOKBAG	28
3	MAXIMIZING LEARNING FOR ALL	29
	DESIGN CAN CREATE BARRIERS	29
	BARRIERS TO LEARNING	29
	PHYSICAL BARRIERS	30
	SENSORY BARRIERS	30
	COGNITIVE BARRIERS	31
	SOCIAL-EMOTIONAL BARRIERS	31
	SCAFFOLDS AND SUPPORTS	32
	KEY TAKEAWAYS	35
	IDEAS TO PONDER	35
	FOR YOUR BOOKBAG	36
4	HOW UDL TRANSFORMS THINKING	37
	A SEMINAL QUESTION	37
	GOING BEYOND THE SURFACE	39
	THE UDL JOURNEY	39
	TERRY STARTS HIS UDL JOURNEY	40

	KEY TAKEAWAYS	41
	IDEAS TO PONDER	42
	FOR YOUR BOOKBAG	42
5	UDL EXEMPLARS IN THE FIELD	45
	UDL JOURNEY EXEMPLARS	45
	MR. DANIEL'S UDL JOURNEY	46
	MS. MIRANDA'S UDL JOURNEY	53
	MS. LING'S UDL JOURNEY	57
	MS. KIM'S UDL JOURNEY	61
	MS. KABIR'S UDL JOURNEY	67
	MS. AHMED'S & MS. DEY'S UDL JOURNEY	72
	MS. SMITH'S UDL JOURNEY	77
	MS. MITCHELL'S UDL JOURNEY	84
	MS. SANCHEZ'S UDL JOURNEY	91
	MS. JAZEEM'S UDL JOURNEY	96
	MR. NEVILLE'S UDL JOURNEY	99
	MS. SCOTT'S UDL JOURNEY	103
	MR. BAKER'S UDL JOURNEY	109
	MR. XAVIER'S UDL JOURNEY	116
	MS. IMANI'S UDL JOURNEY	121
	MS. CHATMAN'S UDL JOURNEY	127
	MR. ABRAHAM'S & MS. BROWNE'S UDL JOURNEY	133
	MS. BECK'S UDL JOURNEY	140
	DR. LLOYD'S UDL JOURNEY	146
	DR. WRIGHT'S UDL JOURNEY	152
	DR. OSHIRA'S UDL JOURNEY	157
	DR. MARIN'S UDL JOURNEY	164
	DR. LOPEZ'S UDL JOURNEY	169
	DR. ROBERT'S UDL JOURNEY	172
	MS. MARSHALL'S UDL JOURNEY	178
	MS. PARK'S UDL JOURNEY ADULT ED/PRISON	185
	DR. MCDONALD'S & MAEVE'S UDL JOURNEY— PROFESSIONAL LEARNING	190
	KEY TAKEAWAYS	198

IDEAS TO PONDER	198
FOR YOUR BOOKBAG	199
APPENDIX	201
GLOSSARY	211
REFERENCES	213
INDEX	217

Table of Figures

Figure 1.1	Three Brain Networks	3
Figure 1.2	Universal Design for Learning Guidelines (3.0)	5
Figure 1.3	Crossing the Street	7
Figure 1.4	Burning Glucose	10
Figure 2.1	Designing for Learner Variability	19
Figure 2.2	Balancing Context	23
Figure 2.3	Equality vs. Equity	25
Figure 3.1	Scaffolds and Supports	34
Figure 4.1	Terry's Dilemma	41
Figure 5.1	UDL Principle of Engagement: Welcoming Interests & Identities	47
Figure 5.2	UDL Principle of Engagement: Sustaining Effort & Persistence	48
Figure 5.3	UDL Principle of Representation: Perception	49
Figure 5.4	UDL Principle of Representation: Language & Symbols	49
Figure 5.5	UDL Principle of Action & Expression: Expression & Communication	50
Figure 5.6	UDL Principle of Action & Expression: Strategy Development	50
Figure 5.7	UDL Principle of Action & Expression: Interaction	55
Figure 5.8	UDL Principle of Engagement: Welcoming Interests & Identities	56
Figure 5.9	UDL Principle of Engagement: Sustaining Efforts & Persistence	59
Figure 5.10	UDL Principle of Representation: Building Knowledge	60
Figure 5.11	UDL Principle of Representation: Perception	63
Figure 5.12	UDL Principle of Action & Expression: Expression & Communication	64
Figure 5.13	UDL Principle of Engagement: Emotional Capacity	65
Figure 5.14	UDL Principle of Engagement: Welcoming Interests & Identities	69
Figure 5.15	UDL Principle of Engagement: Emotional Capacity	69
Figure 5.16	UDL Principle of Action & Expression: Strategy Development	70
Figure 5.17	UDL Principle of Engagement: Welcoming Interests & Identities	74

Figure 5.18	UDL Principle of Representation: Building Knowledge	74
Figure 5.19	UDL Principle of Action & Expression: Strategy Development	75
Figure 5.20	UDL Principle of Engagement: Sustaining Effort & Persistence	76
Figure 5.21	UDL Principle of Action & Expression: Strategy Development	79
Figure 5.22	UDL Principle of Engagement: Sustaining Effort & Persistence	79
Figure 5.23	UDL Principle of Representation: Perception	80
Figure 5.24	UDL Principle of Representation: Language & Symbols	81
Figure 5.25	UDL Principle of Action & Expression: Expression & Communication	82
Figure 5.26	UDL Principle of Engagement: Welcoming Interests & Identities	86
Figure 5.27	UDL Principle of Engagement: Emotional Capacity	87
Figure 5.28	UDL Principle of Representation: Building Knowledge	88
Figure 5.29	UDL Principle of Representation: Perception	88
Figure 5.30	UDL Principle of Representation: Language & Symbols	89
Figure 5.31	UDL Principle of Representation: Perception	92
Figure 5.32	UDL Principle of Engagement: Sustaining Effort & Persistence	92
Figure 5.33	UDL Principle of Engagement: Welcoming Interests & Identities	93
Figure 5.34	UDL Principle of Action & Expression: Expression & Communications	94
Figure 5.35	UDL Principle of Engagement: Welcoming Interests & Identities	98
Figure 5.36	UDL Principle of Representation: Building Knowledge	98
Figure 5.37	UDL Principle of Engagement: Emotional Capacity	100
Figure 5.38	UDL Principle of Engagement: Sustaining Effort & Persistence	101
Figure 5.39	UDL Principle of Engagement: Welcoming Interests & Identities	104
Figure 5.40	UDL Principle of Representation: Language & Symbols	105
Figure 5.41	UDL Principle of Representation: Perception	105
Figure 5.42	UDL Principle of Action & Expression: Expression & Communication	106
Figure 5.43	UDL Principle of Engagement: Welcoming Interests & Identities	106
Figure 5.44	UDL Principle of Engagement: Sustaining Effort & Persistence	107
Figure 5.45	UDL Principle of Action & Expression: Interaction	111
Figure 5.46	UDL Principle of Action & Expression: Strategy Development	112
Figure 5.47	UDL Principle of Engagement: Welcoming Interests & Identities	112
Figure 5.48	UDL Principle of Representation: Building Knowledge	113
Figure 5.49	UDL Principle of Representation: Language & Symbols	114

Figure 5.50	UDL Principle of Action & Expression: Expression & Communication	114
Figure 5.51	UDL Principle of Engagement: Welcoming Interests & Identities	117
Figure 5.52	UDL Principle of Representation: Building Knowledge	118
Figure 5.53	UDL Principle of Engagement: Sustaining Effort & Persistence	119
Figure 5.54	UDL Principle of Engagement: Welcoming Interests & Identities	122
Figure 5.55	UDL Principle of Representation: Language & Symbols	123
Figure 5.56	UDL Principle of Engagement: Sustaining Effort & Persistence	123
Figure 5.57	UDL Principle of Engagement: Welcoming Interest & Identities	125
Figure 5.58	UDL Principle of Engagement: Sustaining Effort & Persistence	125
Figure 5.59	UDL Principle of Representation: Building Knowledge	126
Figure 5.60	UDL Principle of Action & Expression: Interaction	130
Figure 5.61	UDL Principle of Engagement: Welcoming Interests & Identities	130
Figure 5.62	UDL Principle of Representation: Perception	132
Figure 5.63	UDL Principle of Action & Expression: Strategy Development	133
Figure 5.64	UDL Principle of Representation: Language & Symbols	135
Figure 5.65	UDL Principle of Representation: Building Knowledge	136
Figure 5.66	UDL Principle of Representation: Perception	137
Figure 5.67	UDL Principle of Representation: Building Knowledge	138
Figure 5.68	UDL Principle of Engagement: Sustaining Effort & Persistence	142
Figure 5.69	UDL Principle of Engagement: Welcoming Interests & Identities	143
Figure 5.70	UDL Principle of Representation: Perception	143
Figure 5.71	UDL Principle of Action & Expression: Expression & Communication	144
Figure 5.72	UDL Principle of Representation: Building Knowledge	147
Figure 5.73	UDL Principle of Engagement: Sustaining Effort & Persistence	148
Figure 5.74	UDL Principle of Engagement: Welcoming Interests & Identities	149
Figure 5.75	UDL Principle of Representation: Building Knowledge	150
Figure 5.76	UDL Principle of Action & Expression: Expression & Communication	151
Figure 5.77	UDL Principle of Representation: Perception	153
Figure 5.78	UDL Principle of Action & Expression: Expression & Communication	154
Figure 5.79	UDL Principle of Engagement: Sustaining Effort & Persistence	154
Figure 5.80	UDL Principle of Representation: Language & Symbols	159
Figure 5.81	UDL Principle of Representation: Perception	159
Figure 5.82	UDL Principle of Engagement: Welcoming Interests & Identities	160

Figure 5.83	UDL Principle of Representation: Building Knowledge	161
Figure 5.84	UDL Principle of Action & Expression: Strategy Development	161
Figure 5.85	UDL Principle of Action & Expression: Interaction	167
Figure 5.86	UDL Principle of Action & Expression: Strategy Development	167
Figure 5.87	UDL Principle of Representation: Building Knowledge	168
Figure 5.88	UDL Principle of Engagement: Welcoming Interests & Identities	171
Figure 5.89	UDL Principle of Action & Expression: Interaction	172
Figure 5.90	UDL Principle of Representation: Perception	175
Figure 5.91	UDL Principle of Engagement: Sustaining Effort & Persistence	175
Figure 5.92	UDL Principle of Action & Expression: Expression & Communication	177
Figure 5.93	UDL Principle of Representation: Building Knowledge	177
Figure 5.94	UDL Principle of Engagement: Sustaining Effort & Persistence	180
Figure 5.95	UDL Principle of Representation: Language & Symbols	181
Figure 5.96	UDL Principle of Action & Expression: Expression & Communication	182
Figure 5.97	UDL Principle of Engagement: Sustaining Effort & Persistence	182
Figure 5.98	UDL Principle of Engagement: Welcoming Interests & Identities	183
Figure 5.99	UDL Principle of Engagement: Welcoming Interests & Identities	188
Figure 5.100	UDL Principle of Engagement: Sustaining Effort & Persistence	189
Figure 5.101	UDL Principle of Engagement: Welcoming Interests & Identities	192
Figure 5.102	UDL Principle of Engagement: Emotional Capacity	193
Figure 5.103	UDL Principle of Action & Expression: Strategy Development	193
Figure 5.104	UDL Principle of Action & Expression: Expression & Communication	194
Appendix A	UDL Journey Descriptors	202

Foreword



Early in my career, I taught at the Landmark School in Beverly, Massachusetts, which serves students with dyslexia and related learning differences. For years, I tutored two young men, Randy and Robert, who both struggled with reading and writing. Over time, I saw that Randy made progress on academic skills, yet so lacked confidence that he could never even acknowledge his gains, much less feel good about himself as a result. He lacked persistence, giving up at the first obstacle, and seemed to get little enjoyment out of life.

Robert was different. He struggled to make progress with reading and writing, no matter what methods I tried. But he always came to the tutorial in a jovial mood, teasing me about my “flood pants” if he thought my cuffs were too short. Robert laughed a lot and he worked hard, rarely giving up even when the going was tough. I was convinced that Robert would find his way into productive adulthood, even though academics would not be a strength. Randy, I worried about.

I was bitten by questions: Are affective factors like perceived competence and self-esteem essential to support persistence in the face of frustration? Are affective factors actually more important than academic progress for positive life outcomes? How can we as educators support self-esteem and confidence in our students? These I pursued in my doctoral research, becoming more convinced than ever that affect, what we call “the why” of learning, is the most important dimension to support and develop in our students.

It was this driving interest that I brought to the table when David Rose, myself, and our colleagues founded CAST, Inc. in 1984. And it is this driving interest, in part, that brings me such pleasure in introducing this important new contribution to the Universal Design for Learning (UDL) literature.

In their introduction, Drs. Ralabate and Coyne state, “This book defines UDL and then unpacks it as a framework that (1) encourages engagement by activating motivation and validating a sense of belonging, self-actualization, and learner agency.”

Throughout the book, the authors honor and elevate the importance of learner agency, which, according to UDL Guidelines 3.0,

is “agency that is purposeful, reflective, resourceful, authentic, strategic, and action oriented.” This expanded understanding of the affective dimension, like the rest of UDL, is based in neuroscience, which “shows the inextricable relationship between emotion and cognition: when people learn to understand and manage their emotions . . . and their behaviors . . . they are freed up to learn more deeply and efficiently. They also become more self-directed, confident learners” (Meyer et al., 2026).

The authors’ thorough ongoing treatment of the affective dimension of UDL not only encompasses the latest UDL theory but also advances UDL practice through 27 tremendously rich real-life stories contributed by general educators, special educators, higher education faculty, UDL coaches, and professional learning leaders. These stories bring the latest theory to life, and in almost every case, some facet of learner agency is the catalyst for change. A challenge in student engagement spurs change that impacts the entire learning ecosystem. This supports my lifelong conviction (but no bias!) that affect is the *more equal* of the three networks.

Another compelling thread in this book is the emphasis on changing mindsets. We can learn a lot from research and broad trends, but I personally learn the most from a fine-grained examination of where the rubber meets the road, where real people grapple with real problems. In these stories, as in the evolving life of UDL theory and practice generally, a problem’s solution often comes with a Copernican shift in understanding, which in turn redefines the problem and leads to a completely new kind of innovation.

This kind of shift happened repeatedly in the evolution of CAST, as Dr. Coyne knows since she was there almost from the start. When we began, we had no idea where our curiosity would take us: We wanted to improve education for students with disabilities, and we thought computers might help them learn. With a small seed grant, we formed a lab where we could put kids and computers together and experiment. Almost immediately, we saw glimmers of promise from simple experiences of success.

The barriers encountered by our diverse group of students, so named the “CAST Pioneers,” inspired us to devise pathways for access to learning. By applying the principles of Universal Design for Learning—which we would only later name and map to our emerging insights—the CAST Pioneers who could not thrive and learn in a print-centric world were suddenly reading, creating stories, mastering math, and, most importantly, engaging enthusiastically in learning. Far from being a problem for schools, students with disabilities and learning differences

were leading the way to innovation that helped everyone. Students who had always been marginalized were teaching us new ways to develop learning goals, methods, materials, and assessments.

In each of the real-life stories presented in *Unpacking Universal Design for Learning*, educators share their “a-ha” moments and shifts in mindset. They encounter a challenge, apply UDL to create a solution, change their practices, and find their thinking transformed. Among other changes, they see much more potential to learn and grow in each of their students. That in itself is remarkable and helpful, especially because the stories span a large range of ages and learning domains. But the authors go deeper: They circle back to UDL, linking the specific new mindsets and practices to the framework, as well as generating next steps to help readers see the iterative process of design. They help readers understand in clear, practical terms how to create a UDL classroom and move to the next level. For each educator, there is a shift of mindset, and the detailed sharing of this change gives momentum to readers, who can take these processes into their environments to bring about yet more change.

Some examples from the vignettes offer a sense of the innovation and variety included: using UDL to teach self-regulation to kindergarten students; redesigning a science unit to focus on material immediately relevant to the class (their own watershed); for high schoolers interested in getting their drivers licenses, asking them to review a video of a car crash and write a grammatically correct accident report; or studying the Declaration of Independence as a breakup letter. These lively ideas and the profound changes they engender in practice and in mindsets exemplify the current frontiers of Universal Design for Learning. The contributors are current-day pioneers, pushing the ideas and innovations ever further and inspiring readers to do the same.

Unpacking Universal Design for Learning is an apt title for this important volume. The authors bring decades of commitment to UDL. Each has made significant contributions to UDL research, education design, professional learning, and advocacy, and together they offer here a pivotal new resource for the field. We learn from master educators—professionals who take the maxim “all means all” very seriously—about the ways to infuse UDL’s principles, framework, and practice into the everyday work of schools.

—Dr. Anne Meyer, Cofounder, CAST

Preface



WHY DID WE WRITE THIS BOOK?

Nearly 40 years ago, **Universal Design for Learning (UDL)** was introduced by **CAST** as a conceptual framework that would help educators better meet the academic needs of all learners, including those with disabilities. CAST, originally known as the Center for Applied Special Technology, was founded in 1984 by researchers Dr. David Rose and Dr. Anne Meyer. Initially, the mission was to apply technology solutions to help students with disabilities. Through their continued research, their innovative idea transformed from “fixing the student” to “redesigning the curriculum.” In response, CAST developed the UDL framework in the 1990s to help educators and curriculum designers create flexible learning environments that support all learners (Rose & Meyer, 2002). Since then, UDL has become internationally renowned and is now recognized as an evidence-based framework for curriculum and instruction that provides access to learning for all learners, no matter their skills, talents, needs, or age (McKenzie et al., 2025).

As experienced educators, researchers, and providers of professional learning, the authors of this book have brought UDL to thousands of teachers and students. This book represents their collective knowledge of how UDL supports ALL students, regardless of who they are as learners. It demonstrates how UDL can impact the instructional design of ALL educators no matter who, what, or where they teach.

WHO SHOULD READ THIS BOOK?

Educators generally identify themselves by labels such as special education, general education, advanced placement (AP), elementary, middle, high school, or higher education. They may also include the specific content areas they teach, such as math, English language arts, science, or social studies. Sometimes these labels can be limiting. Educators may overlook learning about instructional frameworks or strategies if they don’t appear to be relevant to their teaching population or academic content.

This book is unique because it provides a framework for planning and instruction that benefits educators, no matter what their focus area may be or how the students they teach are identified. You will learn how the application of the UDL framework can be used by all educators to impact ALL learners regardless of their imposed labels or categories.

Educators who are new to UDL will learn how to take that critical first step of applying UDL to their practice. Meanwhile, educators who already have an understanding of UDL will broaden their UDL implementation by building on dozens of authentic vignettes and exemplars. Used as a resource for college-level coursework, this book will provide both current teachers and teacher candidates a solid base for understanding the relationship of the UDL framework to instructional planning. Used as a resource for professional learning workshops and professional learning teams, this book offers experienced educators the opportunity to deepen their UDL practice and meet the instructional needs of ALL of their learners.

OUR GOALS

This book defines UDL and then unpacks it as a framework that (1) encourages engagement by activating motivation and validating a sense of belonging, self-actualization, and learner agency; (2) provides sensory and physical accessibility; and (3) supports understanding by offering cognitive accessibility for ALL learners regardless of age, skills, talents, or needs. Woven together, the chapters build on each other to provide a complete description of how unpacking UDL can lead to developing a “UDL lens” that provides a way of meeting the needs of all learners.

Features included at the end of every chapter assist you in building from what is known to new levels of insight, including examples that share authentic educator voices, *Key Takeaways* that provide a summary of main points, and *Ideas to Ponder* that present questions to expand learning. These questions also offer inspiration for professional learning teams or higher education class discussions. Additional resources for further exploration are provided in the *For Your Bookbag* section. A unique component of this book is the final chapter, Chapter 5, that provides 27 authentic exemplars describing how various educators embraced UDL and how it transformed their thinking. Definitions for words/terms that appear in blue text throughout the book can be found in the glossary.

The following overview describes the purpose and content of each chapter:

- **Preface**—The Preface provides an outline of the book, defines our goals in writing this book, and explains its various features.
- **Chapter 1: UDL and the Brain**—Chapter 1 defines the Universal Design for Learning framework and its components, describes its relationship to relevant neuroscience and learning science research, and provides an overview of two overarching concepts: (1) *All three sets of brain networks work together*, and (2) *Our brains burn different amounts of glucose as we encounter varying levels of challenge in different tasks and contexts*.
- **Chapter 2: Designing UDL Learning Experiences**—Chapter 2 takes a deep dive into a third concept—*learner variability is predictable*. This chapter not only describes the concept of learner variability but also explains how (1) designing for learner variability informs goals, assessments, methods, and materials; (2) proactively applying UDL to the design of learning environments and lessons enhances learner agency; and (3) aspects such as context and critical values intersect with developing learner agency.
- **Chapter 3: Maximizing Learning for All**—Chapter 3 outlines the types of barriers that can impact learning, defines the difference between scaffolds and supports, and highlights the importance of moving beyond learner choice to providing support for learning.
- **Chapter 4: How UDL Transforms Thinking**—Chapter 4 describes aspects of UDL implementation that go beyond providing learner choice and multiple means of representation and presents an example of how one educator understands how to address learner variability using the UDL framework.
- **Chapter 5: UDL Exemplars in the Field**—Chapter 5 includes 27 authentic stories written by general educators, special educators, higher education faculty, UDL coaches, and professional learning leaders. Each contributor explains how implementing UDL transformed their design of learning environments and lessons to better meet learners' needs and support learner agency.

You may read this book as part of a course assignment or as a member of a professional learning team. Or you may choose to read this book as part of a personal goal to expand your current

understanding of UDL. You may want to read the sections of the book that are most pertinent to your current teaching situation. However, we recommend that you read each chapter in sequence in order to optimize understanding of how UDL implementation can extend learner engagement and cognitive growth, as well as ensure accessibility.

YOUR GOALS

Before we begin any professional learning experience, we ask participants to reflect on how our proposed learning goals relate to their personal learning goals. Thinking about what you want to learn has the benefit of focusing your learning (Beninghof, 2014). Take a moment to do that right now. Decide what you want to learn from this book and write it down. Your personal learning goal may focus on building an enhanced understanding of how UDL can make a difference in your practice. Or, more specifically, you may want to learn how to design instruction with a “UDL lens” that supports the academic progress of all of your learners. When you finish the book, review your personal learning goal(s) to determine what you learned and whether you met your goals.



KEY TAKEAWAYS



With insights gained from working with students with disabilities, CAST created Universal Design for Learning (UDL), an educational framework that would make curriculum more flexible and responsive for ALL learners.



Over the past 40 years, UDL has been adopted across the globe as a conceptual framework that supports ALL learners, regardless of imposed labels, skills, talents, needs, or age.



Developing a “UDL Lens” helps educators design instruction that meets the needs of ALL learners.



IDEAS TO PONDER

1. Why is learning about UDL important to you?
2. How can adopting a “UDL lens” for designing your instruction make a difference for all your learners?
3. What do you already know about UDL that you can use as a base for learning more?

FOR YOUR BOOKBAG

- Rose, D. H. & Meyer, A. (2002). *Teaching every student in the digital age: Universal Design for Learning*. ASCD.
 - Written by the co-founders of CAST, this book is considered the first comprehensive discussion of the UDL principles. It offers a plethora of research that forms the basis for the UDL framework.
- Meyer, A., Rose, D. H., & Gordon, D. (2014). *Universal design for learning: Theory and practice*. CAST Professional Publishing.
 - This book demonstrates the continued development of UDL as new research in the fields of neuroscience and education has evolved.
- Meyer, A., Rose, D. H., & Gordon, D. (2024). *Universal design for learning: Principles, framework and practice*. CAST Professional Publishing.
 - This book continues the development of UDL.
- Meyer, A., Rose, D. H., & Gordon, D. (2026). *Universal design for learning: Principles, framework and practice* (3rd ed.). CAST Professional Publishing.
 - This edition by Dr. Meyer and Dr. Rose provides an update to the latest brain research.

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The final chapter of this book includes 27 UDL Journeys that are based on the authentic experiences of the contributors and the following classroom and higher education educators and UDL experts: Sam Allison, Allysa Boucher, Amanda Coburn, Stephanie Craig, Kelley Culp, Rachel Currie-Rubin, Anya Evmenov, Molly Fountain, Stacy Giggie, Tracey Hall, Elizabeth Hartman, Bob Hughes, Loui Lord Nelson, Mary Jane Oberofer, Bart Pisha, Allison Posey, Pat Previte, Kelley Regan, Alexis Reid, Kristin Robinson, Laurie Sarchet, Cherie Smith, Elizabeth Stein, and Karlene Warns. The authors are extremely grateful for their contributions. Please note their bios below.

In particular, the authors wish to express their heartfelt appreciation to Dr. Anya Evmenova, Dr. Loui Lord Nelson, and Kristin Robinson for their assistance in framing the UDL story templates for the UDL Journeys contained in this book. Their expertise enriched all of the UDL stories in Chapter 5.

ABOUT THE CONTRIBUTORS

Sam Allison grew up and lives in New England. He started working with kids as a long-time camp counselor, where he learned to “bring the camp spirit home” after the summers were over. His teenage struggles with mental health made him appreciate the importance of having adults at school whom kids can trust implicitly. He has been an educator for 10 years with a wide-ranging portfolio: He has taught everything from honors history to a life skills program, with a stint in a children’s inpatient unit. He was drawn to UDL when he was looking for ways to eliminate the “Mr. Teacher lectures from afar” feel of his own schooling; it gave him a framework to instead become a trusted guide for his kids. Along with his wife, he is the proud parent of one baby on the way and three melodramatic cats.

Alyssa Boucher, PhD, is a speech-language pathologist and Clinical Assistant Professor at Boston University. Dr. Boucher's primary teaching, research, and clinical interests are in the areas of speech sound disorders, early literacy, and developmental language disorders. Previously, Dr. Boucher was a research associate at CAST, where she collaborated with learning scientists to develop tools and curricula using the principles of UDL. In her current position, she incorporates her UDL expertise into her academic and clinical roles and partners with educators to create flexible learning environments to support meaningful engagement for children with communication disorders.

Amanda Coburn has been a dedicated Baltimore County Public Schools teacher for over 21 years. She holds a Master's in Teaching and a BA in Mathematical Sciences, and became National Board Certified in 2013, maintaining her certification ever since. Mrs. Coburn teaches mathematics and coaches both track & field and field hockey and is known for building strong relationships with her students and creating a supportive, engaging classroom environment. She has served as department chair at a vocational tech school; written curriculum for Algebra I, Geometry, and Statistics; and advises Mu Alpha Theta, the Math Honor Society. As an AP Statistics Reader/Grader and an active participant in professional development through College Board, NCTM, and other organizations, Mrs. Coburn continues to grow as an educator. A lifelong learner and traveler, she studied abroad in London and enjoys exploring new cultures. Mrs. Coburn continually inspires students and colleagues alike through her enthusiasm, expertise, and unwavering dedication to education.

Stephanie L. Craig, PhD, is an Associate Professor at Marietta College in Marietta, Ohio. Her instruction focuses on preparing preservice teachers to understand and implement Universal Design for Learning to intentionally design inclusive and equitable classrooms for all Pre-K to Grade 12 students. Dr. Craig works with individuals pursuing teaching degrees with the following concentrations: Primary Education Special Education Dual, Middle Childhood Special Education Dual, Wellness Dual, and Adolescent Young Adult Dual. Her courses focus on UDL, co-teaching, assessment, transitioning birth to adult, and high-leverage practices. Dr. Craig previously taught upper elementary grades and provided Title I support services at Bartholomew Consolidated School Corporation (BCSC). She also served in the role of UDL Facilitator the past 5 years with BCSC. Dr. Craig has presented UDL and provided training on the framework at various local, state, and national conferences and international workshops.

Kelley Culp is a 20-year veteran high school English teacher. With a BA in Literature and a Juris Doctorate, her path to the classroom was a different one, but one that provided invaluable learning. Kelley has been implementing UDL ideas in her classroom from the beginning—even when she didn’t know they had a name. After 15 years of implementing UDL strategies, she is a UDL practitioner who gives students ownership of their learning and watches students learn to their full potential. Kelley is also one of the school system’s Tech Titans, helping our teachers become better users of technology. She has presented at local, national, and international conferences on UDL and English pedagogical practices. She served for 5 years on the CAST Network and Connect team to provide opportunities for UDL practitioners to meet and learn from one another. She was awarded the Candice Dodson EdTech Influencer Award in 2025.

Rachel Currie-Rubin, EdD, is a co-owner and Educational Director at Learning Solutions for Learning Success, an integrated psychoeducational assessment practice. Dr. Currie-Rubin has worked in education for over 20 years as a reading teacher, adult education teacher, learning specialist, professional development provider, and educational assessment specialist. She has worked at the Williston Northampton School, CAST, the Carroll School, Boston Children’s Hospital, and Harvard Medical School. She has taught psychoeducational assessment in several graduate programs. Rachel has published articles on reading development and Universal Design for Learning and coedited a book on the school-to-prison pipeline. She has a BS in Speech and Hearing Education from Ithaca College, as well as an EdM in Language and Literacy and an EdD in Human Development and Education, both from the Harvard Graduate School of Education.

Anya S. Evmenova, PhD, is a Professor of Special Education at the College of Education and Human Development and the Endowed Director of the Kellar Institute for Human disAbilities at George Mason University (GMU). Dr. Evmenova’s research interests focus on the use of instructional and assistive technology for cognitive development and academic instruction for students with various abilities and needs, as well as Universal Design for Learning. She has raised more than \$20 million in federal and state grants to support her research and scholarship. Dr. Evmenova is the recipient of multiple UDL awards, including the Teaching Excellence, Online Teaching Excellence, and the John Toups Presidential Medal for Excellence in Teaching from GMU for her UDL-based teaching, as well as the 2025 David Rose UDL Research Award from CAST. She is the Editor-in-Chief for the *Assistive Technology Outcomes and Benefits* journal published by ATIA.

Molly Fountain is in her 17th year of teaching, all in the middle school setting. She currently teaches eighth-grade social studies at Northside Middle School, part of the Bartholomew Consolidated School Corporation, in Columbus, Indiana. A graduate of Purdue University, Fountain received her Bachelor of Arts in social studies education in 2009. As a middle school social studies teacher, Fountain is passionate about bringing history to life for her students and, as she often says, getting 13- and 14-year-olds to see the subject as more than just “old, dead people.” Beyond helping middle schoolers enjoy school again through simulation activities like a blindfolded obstacle course to demonstrate the challenges of early explorers to the New World, Fountain is invested in helping future leaders understand the real-world lessons they can glean from history. Outside of her work with her students, Fountain has led multiple professional development sessions centered on engaging students and has served as a mentor to students in cadet and Transition-to-Teaching programs, as well as new teachers in her school district. Fountain was selected as Teacher of the Year for her district in 2023 and was a top 10 finalist for Indiana Teacher of the Year in 2025.

Stacy Giggie is a dedicated and experienced educator with over two decades of experience as a high school English teacher. Her work focuses on creating engaging, student-centered learning environments. Since 2022, she has served as the ELA 6–12 Program Coordinator for Andover Public Schools, where she has led professional development sessions on Universal Design for Learning (UDL). A lifelong learner, she has furthered her expertise by earning a Certificate in School Leadership from Harvard University. Throughout her career, Ms. Giggie has been committed to fostering authentic collaboration and reimagining instruction to meet the diverse needs of all students.

Tracey E. Hall, PhD, has conducted research on instructional design and interventions for all learners from elementary to postsecondary education. Her work has focused on the study of Universal Design for Learning across content areas in design, implementation, and assessment, with a recent focus on opportunity youth. Areas of expertise include reading and writing literacy, science education, formative assessment, teacher professional development, and data-based decision-making for instruction. This work includes the development of tools and technology to provide access and equity for all users. Tracey has worked as a special education teacher, consultant, administrator, and university professor prior to joining CAST in 2001. She has served as principal investigator on several federal and foundation grants in her work at universities and CAST. Her

work includes multiple publications in education journals and books. She is coeditor of the 2024 publication *Universal Design for Learning in the Classroom: Practical Applications for K-12 and Beyond*.

Elizabeth S. Hartmann is a Professor of Education and Chair of the Graduate Education Program at Lasell University. She is also a co-lecturer of T560: Universal Design for Learning at Harvard's Graduate School of Education. Dr. Hartman was a UDL Fellow at CAST in 2010 and a research scientist there in 2021–2023. Her current research examines teacher implementation of UDL and how UDL is enacted to teach learners with multiple disabilities.

Bob Hughes, EdD, is a Professor Emeritus at Seattle University, where he served as an associate professor of adult education and administrator from 2007 to 2017. Prior to that, he held academic positions as a community college faculty member and dean at two colleges in the Seattle area, and as an associate professor of education at California State University, Monterey Bay, where he also directed one of four regional centers of a teacher certification program within the California State University system. His current research and evaluation projects focus on models of effective practices at community colleges, college faculty development, effective instructional design practices, organizational development for colleges and nonprofit organizations, and equity issues. He taught secondary and college students for 38 years. He holds a doctorate in Teaching, Curriculum, and Learning Environments from Harvard University.

Loui Lord Nelson, PhD, is an international leader of Universal Design for Learning (UDL). Loui is a best-selling author, hosts the popular *UDL in 15 Minutes* podcast, completed her post-doctoral fellowship at CAST, and was the recipient of CAST's inaugural Anne Meyer Design Award in 2024. Loui is a former special education teacher and led UDL implementation at the district level. She has influenced change internationally by working with educators and ministries of education across the United States, Africa, Australia, Asia, Canada, and Europe and is proud of her work with the former U.S. Agency for International Development and implementing partners to clarify their application of UDL across low- and middle-income settings. She continues this work independently. More information about Loui and her work can be found at www.theudlapproach.com.

Mary Jane Oberhofer is the Dean of Business, Paralegal & Technology at Tacoma Community College in Tacoma, Washington. She began her career over two decades ago at Vancouver Community College in Vancouver, BC. Mary Jane holds a Master of Arts in Education from Seattle University and a Bachelor of Science in Chemical Engineering from the

University of Calgary. Her contribution to this volume reflects her deep commitment to mentoring emerging professionals in their practice of UDL. In her role as dean, she works to empower students through practical, career-focused education and is an advocate for equity in education with a focus on access to internship opportunities.

Bart Pisha, EdD, graduated in the bottom fifth of his high school class in 1965, when his ADD and dyslexia were not on public education's radar. He then flunked out of Union College. After several years as a hippy, he enrolled in Holyoke Community College, then moved on to UMass Amherst for a degree in Elementary Education. He taught third grade for 5 years and earned a Master's in Special Education from Goddard College. After 5 more years of teaching, supporting third- and fourth-graders in a special education classroom support position, he enrolled in Harvard University Graduate School of Education's doctoral program in Reading. There, he studied under Jean Chall, David Rose, Carol Chomsky, John Willett, Richard Light, and Marybeth Curtis, graduating in 1993 with an EdD in Reading, Language, and Learning Disabilities. He joined CAST in 1985, working directly with students and emerging assistive technologies, as well as serving as CAST's first MIS specialist and first director of research. He collaboratively wrote and carried out federal and other research investigating UDL, while co-teaching UDL at Harvard with David Rose. After leaving CAST in 2005, he held an associate professorship at Lesley University. He now focuses upon playing with his grandchildren.

Allison Posey is a Senior Instructional Designer at Learning Solutions and an international leader for Universal Design for Learning. She worked at CAST for 14 years, where she developed and led programs to apply UDL in schools, universities, and workforce settings. She supported research related to improving access to inquiry science. Allison is passionate about improving instructional practices based on what we know about learning in the brain. She is the author of two books: *Unlearning: Changing Your Beliefs and Practices With UDL* (2020) and *Engage the Brain: How to Design for Learning That Taps Into the Power of Emotion* (2018). She taught biology, psychology, and anatomy in high school and community colleges and still teaches courses at Lasell University. Allison earned a degree in Mind, Brain, and Education from Harvard Graduate School of Education. She is an avid hiker and loves being a mom.

Patricia A Previte's education included 2 years at Cornell University in Ithaca, New York, followed by 2 years at Salem State University in Salem, Massachusetts, where she graduated with a Bachelor of Science in 1986. In 2001, she received a

Master's of Education with Professional Studies in Technology. She currently holds a Massachusetts Elementary Certification, Professional for Grades 1 to 6 until October 2029. She retired from her position as an English teacher at Ipswich Public Schools in 2014. Since her retirement, she has worked as a regular education tutor for Grades K–3, a paraprofessional for Grades 4 and 5, a remote literacy tutor for Grade 4, a Title I math tutor for Grades 3–5, and an English tutor for Grades 5 and 6. As her former principal from Ipswich said of her dedication to teaching, Pat is known for “perfect diction, lover of data, quick to smile and suggest a book.” For Pat, the UDL framework was a natural fit for encouraging all students to engage in reading.

Kelley Regan, PhD, is a professor in the Division of Special Education and disAbility Research at George Mason University. Dr. Regan began her career as a special education teacher of students with mild disabilities, including students with learning disabilities, attention-deficit/hyperactivity disorder, autism, and emotional and behavioral disorders. She taught in separate day facilities for students with EBD and self-contained settings for students with EBD in Grades 6–8. Her primary research interests include identifying effective literacy practices for students with learning and behavioral disabilities and improving teacher preparation. In addition, Dr. Regan's research has involved the development and testing of a technology-based intervention to support the written expression of students with disabilities. She has received over \$12 million in external research and personnel preparation funding from the U.S. Department of Education's Office of Special Education Program (OSEP) and the Virginia Department of Education. She is a former editor of *The Teacher Educators' Journal* and coauthor of *The Inclusive Classroom: Strategies for Effective Differentiated Instruction* (7th edition).

Alexis Reid is an educational therapist and an executive function and learning expert who has spent two decades immersing herself in the science of how people learn and navigate their worlds. From her background in educational and developmental psychology, classroom experiences, to her one-on-one and group work with children, adolescents, and adults, Alexis's work specializes in exploring the intersection of learning and wellness. She has consulted with educational systems and organizations in the United States and worldwide to empower educators to design flexible and accessible learning environments. Her expertise in executive function supports her clients, caregivers, educators, and organizations to achieve more balanced, goal-directed lives. Alexis has been featured as a keynote speaker and presenter and has published in numerous educational and peer-reviewed journals. Alexis and her colleague Lisa Carey published their book *Supporting Student Executive Functions*:

Insights and Strategies for Educators in the spring of 2024, which aims to support educators, coaches, parents, and learners' understanding of executive functions and self-regulatory skills. She also co-hosts the *Reid Connect-ED* podcast with her brother, Dr. Gerald Reid, which focuses on learning, education, mental health, performance, executive function, well-being, and so much more.

Kristin H. Robinson is an instructional designer with over two decades of experience creating UDL-based learning environments that inspire and include every learner. She earned her graduate degrees in American Studies from Yale University, where she also taught American History before continuing her work as a faculty member at Wheaton College (Norton, Massachusetts). Kristin has also brought her expertise into K–8 classrooms, blending scholarly depth with hands-on teaching experience. She brings together her love of teaching, her deep academic training, and her passion for Universal Design for Learning to create environments where curiosity, creativity, and community can thrive. She is a contributor to many publications on UDL and recently coedited the 2024 publication *Universal Design for Learning in the Classroom: Practical Applications for K-12 and Beyond*.

Laura N. Sarchet, PhD, is an Assistant Professor of Special Education at Niagara University (NU) in Lewiston, New York. She is an autistic self-advocate and uses her experience as a neurodivergent and disabled person to raise awareness about autism and disability through research and practice. Before coming to NU, Dr. Sarchet was a special education teacher in the Rochester, New York, area. She works to make education more accessible by studying disability, neurodiversity, and teaching. Dr. Sarchet's research interests include teacher education and teacher preparation programs, Universal Design for Learning, critical disability studies, self-advocacy, developmental disabilities and autism, crip methods, special education, and neurodiversity of teachers. In her free time, Dr. Sarchet enjoys gardening, baking, reading, playing the double bass, knitting, and crocheting.

Cherie Smith is an educational consultant with advanced degrees in Educational Leadership and the Inclusive Classroom. She began her career in special education, serving as both a supervisor and an intervention specialist at the secondary level in Florida and Ohio, supporting students with disabilities in inclusive settings. Cherie has served as co-chair of the Universal Design for Learning Implementation and Research Network (UDL-IRN) Implementation Special Interest Group and as the Implementation Workgroup Lead for the Ohio UDL

Collaborative, where she remains an active member. Her work centers on supporting educators and systems in the practical implementation of UDL, Postsecondary Transition, and Positive Behavior Intervention and Supports (PBIS) through the use of implementation science. She is the creator and now a coauthor of *UDL Connections*, an internationally read monthly newsletter that has reached educators on every continent except Antarctica. In addition to writing and curating resources on UDL, Cherie is a national presenter who regularly shares strategies and implementation guidance at conferences and events. Her contributions aim to support educators in designing inclusive, learner-centered environments grounded in the principles of Universal Design for Learning.

Elizabeth Stein, EdD, has over 30 years of teaching experience, including Grades K–12, with a specialization in Universal Design for Learning (UDL) and special education. She presents nationwide in her role as an educational consultant and instructional coach. Elizabeth is an adjunct professor at Stony Brook University, New York, teaching principles and practices of inclusive education. She is a renewed National Board-Certified educator in literacy and the author of *Humanizing Classroom Management: Restorative Practices and Universal Design for Learning* (CAST 2024), *Elevating Co-Teaching With Universal Design for Learning: Revised and Expanded Edition* (CAST 2023), *Two Teachers in the Room* (Routledge 2017), *The Co-Teaching Power Zone: A Framework for Relationships and Instruction* (Routledge 2024), and other publications.

Karlene Warns is a dedicated early childhood educator with over 35 years of experience teaching kindergarten and first grade at Prettyboy Elementary School in Maryland. Throughout her career, she has built a reputation as a compassionate, student-centered teacher who creates safe, inclusive, and engaging learning environments. Karlene is a proud recipient of her school's Teacher of the Year Award and has served as a mentor and instructional leader, guiding and supporting fellow educators and Towson University college interns in their professional growth. Her teaching is grounded in the principles of Conscious Discipline, fostering emotional safety and connection in the classroom, and she integrates Universal Design for Learning (UDL) to ensure every child can access and engage with the curriculum. Karlene believes that strong relationships, intentional teaching, and a deep respect for the developmental needs of young learners are essential to long-term success. Whether working with students or mentoring colleagues and interns, she is committed to nurturing both academic and social-emotional growth.

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About the Authors

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UNPACKING WHO WE ARE

As authors, our UDL journeys have been aligned but different. Knowing who we are will help construct how we understand the UDL framework and why we decided to coauthor this book.



From Peggy Coyne: Since joining the Center for Applied Special Technology (now known as CAST) as its first full-time staff member in 1987, I witnessed firsthand the birth of UDL. I helped develop innovative research models of UDL and provided professional learning opportunities to thousands of educators, librarians, technologists, and parents throughout the United States, Canada, and Europe. While at CAST, I served as Project Director on U.S. Department

of Education grants (IES, OSEP) focused on literacy and students with all abilities. My research has been published in refereed journals, including *Remedial and Special Education*, and I recently contributed to a chapter on UDL and literacy in the updated *Universal Design for Learning in the Classroom* (second edition). I presented annually at national and international conferences. Now retired, I provide as-needed consultation work to nonprofit organizations as well as to educational publishing companies. My next professional venture is to use the UDL guidelines to support educators and parents as they read to their preschool-aged children. I hold a Master's Degree in Special Education and an EdD in Literacy and Language.

The thrill of being present at the inception of UDL was profound. Although officially retired, the belief that educators ultimately develop and design better learning opportunities for all students, when they consider those on the margins, remains at the heart of my desire to write this book. Every educator should have access to the knowledge and tools that UDL provides, with their goal of ensuring every student succeeds.



From Patti Kelly Ralabate:

After teaching for 25 years as a speech-language pathologist in Connecticut public schools, I joined the National Education Association (NEA) as a policy analyst focused on special and gifted education issues. The NEA was preparing for the congressional reauthorization of the Individuals with Disabilities Education Act (IDEA) and wanted the perspective of someone who had recent experience with applying the law at class-

room and school levels. Simultaneously, CAST was advocating that Congress include UDL in IDEA as a recommended educational framework for general education curriculum design. Their intent was to make the general education learning environment more flexible and responsive to the needs of learners with disabilities or special education needs, as well as all learners, by applying UDL to instructional design. I was intrigued and began to investigate UDL implementation strategies.

Initially, I viewed UDL as many educators do when they first begin to learn about it, as a way to provide access to the general education curriculum by incorporating digital technology and instructional adaptations. But soon, I realized that in addition to offering access, the UDL framework represented a clear understanding of how all humans learn and that it could be applied in any learning environment to provide support and engagement opportunities to each and every learner. Now, more than a decade later, I'm thrilled that UDL is being used across the globe as a curriculum framework that offers opportunities for inclusive learning experiences. Unfortunately, too many educators are still unaware of its true power to provide not only access but also the learning support needed by all learners. That's why it's important to share this book.

CHAPTER 1

The Brain and UDL

DEFINING UNIVERSAL DESIGN FOR LEARNING

Since the Universal Design for Learning (UDL) framework was first defined by Drs. David Rose and Anne Meyer at CAST, millions of educators have learned about it in workshops, online modules, books, and college classes. Regrettably, not all UDL descriptions are complete or as close to the inaugural definition as its authors first intended.

Based on its original conception, UDL is an educational framework grounded in neuroscience research that informs the design and development of educational curriculum, instruction, materials, and learning experiences that optimize and maximize learning for learners of all ages (Rose & Meyer, 2002). The **Universal Design for Learning Guidelines** provide a roadmap for applying the framework in the design of learning environments that appreciate and address variability represented by thousands of learners and educators seen in everyday classrooms.

THE THREE SETS OF BRAIN NETWORKS

Although Dr. David Rose was not the first to describe the mapping of the brain, the UDL Guidelines are based on his work and the research he led at CAST. He described three sets of major networks in our brain: Affective Networks, Recognition Networks, and Strategic Networks.

- **Affective Networks**, located in our midbrain, constantly evaluate how we respond or react to what is occurring

at any given time. Are we safe or unsafe? Should we keep going or stop what we are doing? Should we persist or give up?

- **Recognition Networks**, located in the back of our brain, allow us to perceive, recognize, and establish patterns in our world. For instance, we learn to recognize that the pattern of c-a-t spells the word *cat*. We learn to read this word and to understand the spoken pattern of this word and what it represents. These networks are constantly working to recognize, understand, and automatize the patterns we encounter in our world.
- **Strategic Networks**, located in the front of our brain, provide us with the ability to plan and to execute our next steps. They oversee our ability to move our muscles so we can pick up a pencil to write, and they also govern our executive functions, allowing us to plan which direction we need to head to get to the store and execute how we'll get there. They help us to organize information and determine what to do next with that information.

The three sets of brain networks are illustrated in Figure 1.1. The first box shows the Affective Networks, located at the center of the brain, and highlights their role in stimulating interest and motivation; the second box shows the Recognition Networks, located at the back of the brain, and highlights their role in identifying and categorizing information; and the third box shows the Strategic Networks, located at the front of the brain, and highlights their role in organization, planning, and execution.

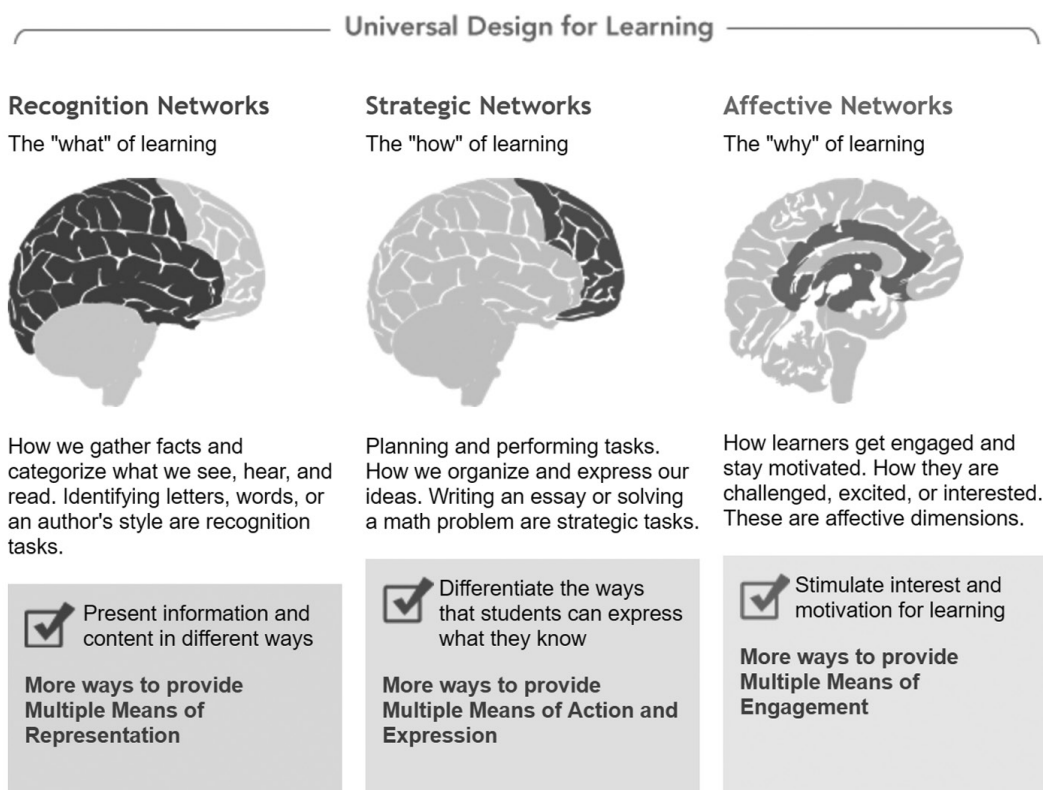
For a deeper discussion of the networks, refer to Chapter 1 in the *Universal Design for Learning: Principles, Framework, and Practice* (Meyer et al., 2026), listed in the *For Your Bookbag* section at the end of this chapter.

UDL PRINCIPLES MAP ONTO BRAIN NETWORKS

At its core, the UDL Guidelines are based on three principles. Each is representative of one of the three sets of brain networks.

- Multiple Means of Engagement corresponds to the Affective Networks.
- Multiple Means of Representation corresponds to the Recognition Networks.
- Multiple Means of Action & Expression corresponds to the Strategic Networks.

FIGURE 1.1 • Three Brain Networks



Source: © CAST (2024a). Used with permission.

The UDL Guidelines provide specific examples of these principles to ensure they are addressed in the development and design of educational curriculum, learning experiences, and materials for all learners, including students in preschool, elementary, middle, high, and higher education, as well as adults engaged in professional learning environments. When multiple means of engagement, representation, and action and expression are considered from the start in the design of learning materials, experiences, and curriculum, barriers to learning are diminished, and learner agency for all is enhanced.

The UDL Guidelines are dynamic and ever-changing as new research informs what educators know about the learning brain. They have already gone through several revisions, including Version 1 in 2008, Version 2.0 in 2011, Version 2.1 in 2014, and Version 2.2 in 2018. Shown in Figure 1.2, Version 3.0 of the UDL Guidelines (link can be found in *For Your Bookbag*), was released in July 2024 and contains the most significant changes, including prompts related to social-emotional growth and learner agency (Gravel & Tucker-Smith, 2024). This book, *Unpacking Universal Design for Learning*, refers to Version 3.0 of the UDL Guidelines.

CAST's considerations and rationale for Version 3.0 of the UDL Guidelines can be found at [About the Guidelines 3.0 Update | CAST UDL Guidelines](#).

The nine UDL Guidelines are learner-centered recommendations based on research that describes how the brain learns. Under each guideline are prompts that educators can consider to design lessons and learning environments. Prompts can be viewed as instructional starting points as they do not include every imaginable learning strategy or consideration.

In Figure 1.2, the Universal Design for Learning Guidelines, the three UDL Principles (i.e., Engagement, Representation, Action & Expression) lay along the top row with the nine UDL Guidelines and 36 suggested prompts arranged in three columns below the three UDL Principles. The UDL Guidelines are interrelated and can be read down each column and across the rows. The first row refers to guidelines and prompts that optimize *access* to learning. The second row includes guidelines and prompts that foster or *build* learning. And the third row includes guidelines and prompts that support learners' **executive function skills** (i.e., strategic mental skills that help learners to organize, plan, and monitor progress) (Gravel & Tucker-Smith, 2024).

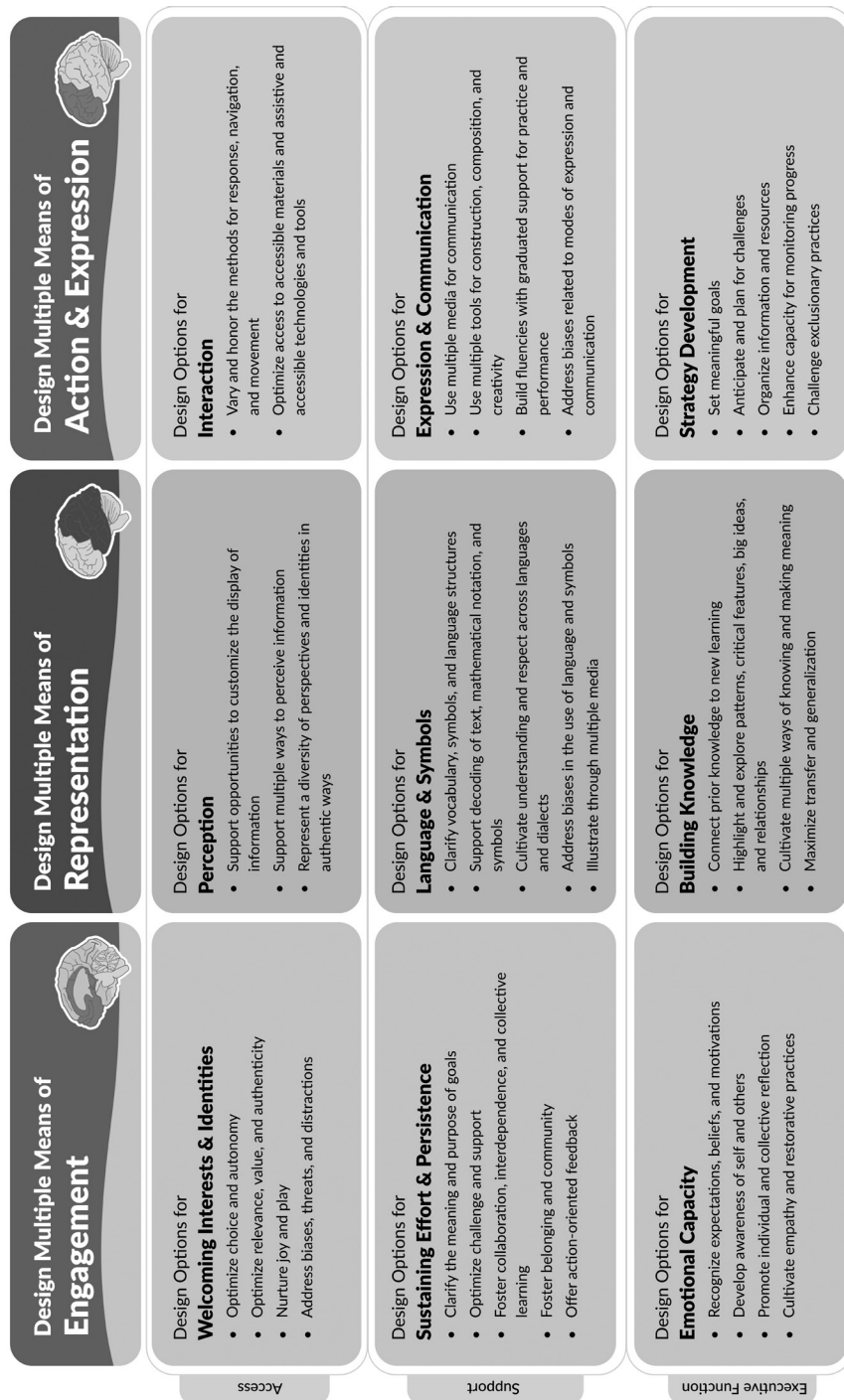
To understand how the guidelines promote learning, let's unpack the UDL Principle of Representation as an example. The first guideline under the UDL Principle of Representation addresses access to information such as decoding text. In other words, you must access, recognize, or perceive the text or math equation when it is presented (i.e., Design Options for Perception). The second guideline represents support for the information, such as being able to understand and utilize the language and symbols in the text after you perceive it (i.e., Design Options for Language & Symbols). The third guideline addresses using your executive function skills to build understanding of the text or equations to facilitate remembering and utilizing them for future learning (i.e., Design Options for Building Knowledge). The other UDL Principles and Guidelines follow a similar progression, first ensuring access, support, and executive function, all working in concert toward the goal of establishing learner agency.

STARTING ON THE SAME PAGE

Some educators associate UDL with digital and hybrid resources. These resources often provide more opportunities to address UDL because of their flexible nature. Nevertheless, UDL is not dependent upon them, as the stories in Chapter 5

FIGURE 1.2 • Universal Design for Learning Guidelines (3.0)

The goal of UDL is **learner agency** that is purposeful & reflective, resourceful & authentic, strategic & action-oriented.



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will demonstrate. Many educators know the UDL framework includes aspects such as multiple representations and learner choice. However, UDL implementation is much more than these ideas. The UDL framework is based on specific overarching concepts that significantly open access to all learners by expanding the impact of proactive curriculum and lesson design and the availability of flexible instructional strategies (Meyer et al., 2014; Meyer et al., 2026).

Before going further, it's important to understand what the key overarching concepts are and what they mean so that we are all *on the same page*. There are three overarching concepts that provide clear examples of how the UDL Guidelines reflect brain research.

1. All three sets of brain networks process simultaneously.
2. Our brains burn different amounts of glucose as we encounter different tasks in different contexts.
3. Learner variability is predictable.

The first two key overarching concepts will be addressed in this chapter. The last one—*Learner variability is predictable*—requires an extensive examination and will be discussed in detail in Chapter 3.

CONCEPT 1: THREE BRAIN NETWORKS PROCESS SIMULTANEOUSLY

The first overarching concept demonstrates the importance of the three sets of brain networks working together, simultaneously. The three sets of networks—Affective, Recognition, and Strategic—although represented individually for the purpose of demonstrating how each contributes to learning, work simultaneously and are highly interconnected to one another, with over 100 trillion connections. In other words, they are highly dependent upon each other for successful learning to occur (Meyer & Rose, 2014; Meyer et al., 2024; Meyer et al., 2026). Let's look at an example to see exactly how this works. Imagine that you are about to cross a street. For the purpose of this example, we will begin with the Recognition Network. You begin to step off the curb but realize a car is speeding toward where you are about to cross. What is happening in your brain?

- Your **Recognition Networks** realize that the car is approaching very fast and unlikely to stop.
- Your **Affective Networks** are alerting you to the fact that a car, approaching very fast and unlikely to stop, is a danger.

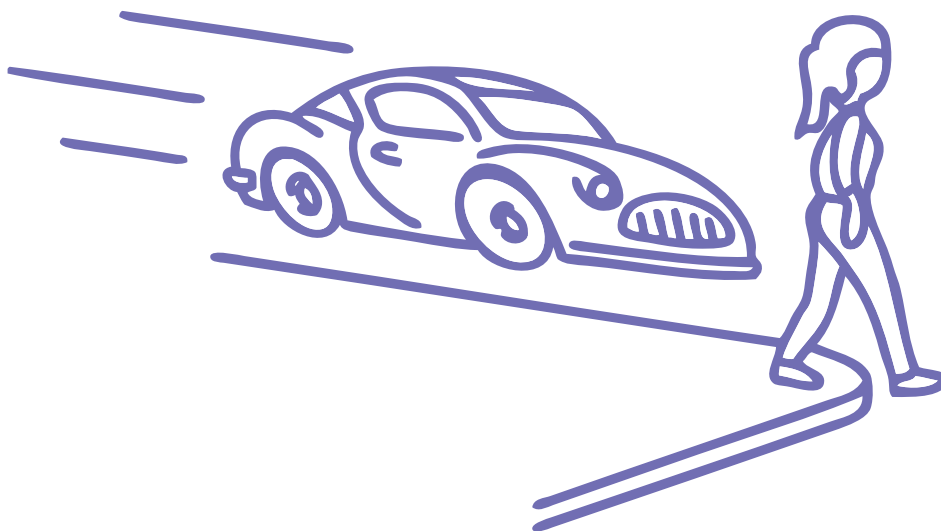
- Your **Strategic Networks** make a plan to step backward off the curb to safety on the sidewalk.

You step safely back on the sidewalk just as the car zooms past you. If one set of your networks had not been working properly, you would very likely have been injured. Here's how that might happen:

- If your **Recognition Networks** did not recognize the speed of the approaching car, your Affective Networks would not have signaled danger, and your Strategic Networks would not have made a plan to step back onto the sidewalk.
- If your **Affective Networks** were not engaged, even though your Recognition Networks recognized the speed of the approaching car, you would not have seen this as a danger and your Strategic Networks would not have bothered to make a plan to step back. Consequently, you would likely have been seriously injured.
- If your **Strategic Networks** were not activated, even though your Recognition Networks recognized the speed of the approaching car and even though your Affective Networks alerted you to danger, you would not have been able to develop an executive plan to tell your muscles to move your body back to the curb.

Figure 1.3 illustrates a person about to cross the street with a speeding car headed in their direction.

FIGURE 1.3 • Crossing the Street



Source: © Jeremy Tenenbaum, 2025. Used with permission.

The second overarching concept relates to how much or how little our brains burn glucose while involved in any activity (Petersen et al., 1998). Let's unpack this tenet with scenarios that demonstrate how it impacts our learning.

CONCEPT 2: BURNING GLUCOSE WHEN WE LEARN

Our brain is constantly burning glucose as we engage in learning experiences. The level of glucose we burn is the consequence of the wrong or right level of challenge in any learning experience. In other words, the design of learning experiences impacts the level of challenge experienced by each learner. For example:

- **Burning a high level of glucose.** If the design of the learning experience causes us to constantly burn a high level of glucose with no relief, the challenge is too high and we might become frustrated.
- **Burning decreasing levels of glucose.** If the level of challenge is appropriate in the design of the learning experience, we will gradually burn less glucose. We feel success as we become more proficient.
- **Burning low levels of glucose.** If the design of the learning experience causes us to burn less glucose as the task becomes automatic and the level of challenge is too low, our engagement with the task may diminish and we will become bored.

LEARNING A NEW TASK. Think of learning a new skill, such as learning how to ski. Your lessons start on the beginner's hill, and at first, your brain burns a great deal of glucose as you are **naïve** and learning to recognize how to strategically manage the skis, so you don't fall. Gradually, as the physical movements become more automatic and fluid, your brain burns less glucose. The task is becoming more familiar and routine or automatic. Finally, you are burning so little glucose that you begin to get bored on the beginner slope and lose your engagement. You seek to apply what you have learned to a **novel** situation in order to increase the challenge. That's when you move to the novice hill, where your brain will begin to burn more glucose and, as a result, reengage as you encounter a longer and steeper hill with more bumps and valleys. But after skiing on this hill for a period of time, you will become more **practiced** and skilled, and the amount of glucose you burn while navigating the slope will lessen and stabilize. You will once again begin to get bored. Your brain wants a new challenge to burn a little more glucose, so

now it's time to move to the intermediate hill, where the same cycle will repeat itself until you move to the expert hill. You have responded to your brain's burning of the glucose, keeping it adequately engaged as you become more proficient at skiing.

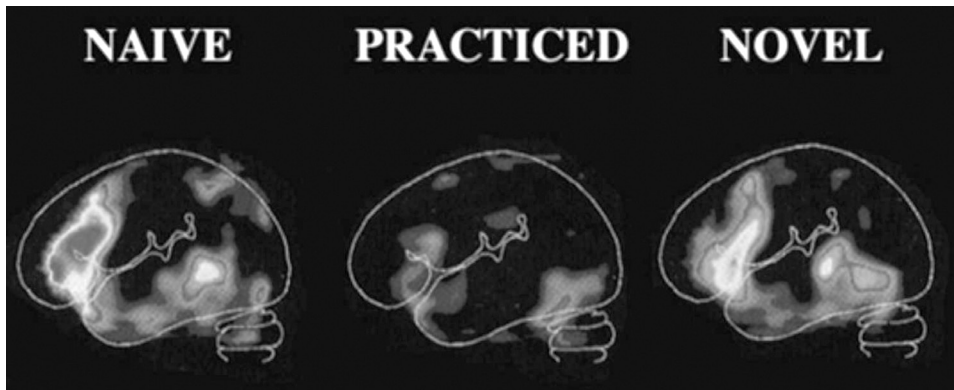
BURNING TOO MUCH GLUCOSE. But the opposite can also occur. You start on the beginner hill and learn the basic skiing moves, but you just don't quite get them and struggle each time you ski down the hill. Your brain is continually burning glucose, and the amount it burns never lessens, and sometimes when you are too near another skier or you approach a bump in the hill, it burns more, sending a warning signal. You finally give up and head to the lodge. You are exhausted and really didn't enjoy yourself. You try the next day, but the same thing happens. Your feet just don't quite do what they need to do and you are always afraid of falling. Later in the season, you continue to experience the same thing. You are still burning the same high level of glucose, and the moves are not becoming automatic. You turn in your skis and go home, never to return to the slopes. The level of challenge remained too high and never subsided. You give up and move on to another sport where you feel success.

BURNING TOO LITTLE GLUCOSE. Likewise, if, for some reason, you are not allowed to move from the bunny slope to the novice, you will become easily bored and disengaged since the task is now so automatic that you are no longer burning any glucose. Just as you head to the lodge if you are constantly overchallenged, you will also head to the lodge if you are underchallenged.

Figure 1.4 illustrates different levels of glucose in the brain as an individual engages in an ideal learning experience. The first shows the brain in a *naïve* or new learning situation. Here the brain burns more glucose as the individual learns a task for the first time. Think of being on the bunny slope learning how to stop the skis. The second shows the brain when the learning situation is *practiced* or repeated. The brain burns far less glucose as the task becomes automatic. At this point, the individual is ready to apply what has become automatic or learned to a new situation or challenge. Think of having to stay on the bunny slope and not being allowed to move on to a new challenge on the novice slope. Without a new challenge, you would get bored. And the third shows the brain in a *novel* learning situation where a new level of challenge is introduced and applied to what has already been learned. Here the brain is not burning as much glucose as when the task was new, but it is burning enough to respond to the new level of challenge. Think of applying what was learned on the bunny slope to the novice slope. With this new level of challenge, you no longer need to learn

how to stop the skis, but you will now focus on maneuvering the steeper hills on the novice slope. Figure 1.4 shows three brain scans and the amount of glucose burning at the naive, practiced, and novel levels of challenge.

FIGURE 1.4 • Burning Glucose



Source: Petersen et al. (1998). Used with permission.

This scenario occurs with any new skill as we learn, whether it be knitting, drawing, dancing, basketball, track, addition, subtraction, algebra, chemistry, reading, or writing. The list goes on. If we continue to burn glucose due to the design of the learning experience, we become frustrated. Likewise, if we don't burn enough glucose, we lose interest. In other words, the design of any learning experience impacts whether we will persist. The intent of the UDL Guidelines is to help educators and publishers of curriculum to design learning experiences that address what we know about our brain activity in any given learning situation and to ensure learners are appropriately challenged and therefore successful.

BURNING GLUCOSE DURING LEARNING

- When we encounter a task where we constantly burn a high level of glucose, we can become frustrated. This is too much challenge.
- When we encounter a task where we burn glucose, then burn less as we become more proficient, we are likely to feel success. This is the right amount of challenge.
- When we encounter a task where we initially burn glucose, then burn less as the task becomes automatic and the amount we burn remains low, our engagement for the task will diminish and we will become bored. This is too little challenge.

Now apply these ideas to one of your own learning situations. Think of a time that you dreaded going to a class: You were struggling and might have skipped the class, misbehaved in the class, or just thought you weren't smart enough to learn new content. Instead of blaming yourself, what might have helped you succeed? Could there have been more examples provided or another format, such as manipulatives or a video, so you could see the process? Could you have accessed hints or scaffolds to help break down the task or skill?

On the other hand, think of a time that you flew through a learning experience and felt like you learned nothing new. You were bored, so you decided to doodle or write a note to your best friend. Instead of feeling bored and wasting precious learning time, you would have benefited from the opportunity to complete a different task that required you to apply the skills to a more complex situation.

Finally, think of a time when you were appropriately challenged and you loved the learning experience. All of these suggestions, whether they are for students who struggle or are not challenged enough, are about designing learning experiences that support all learners. For examples of how educators might apply the UDL Guidelines to create a balance between challenge and support, go to Chapter 5 to read how an elementary school teacher provided support for a learner who struggled with writing in Ms. Miranda's UDL Journey or how a high school teacher balances challenge with support in Mr. Abraham's and Ms. Browne's UDL Journey.

The third overarching concept addresses what is now understood to be the predicted variability of learners. Read the next chapter to unpack the concept of learner variability.



KEY TAKEAWAYS



Our learning brains have three sets of networks—Affective, Recognition, and Strategic—that work together simultaneously as we learn and as we act.



The UDL Principles are aligned with the three sets of brain networks:

- Multiple Means of Engagement—Affective Networks
- Multiple Means of Representation—Recognition Networks
- Multiple Means of Action & Expression—Strategic Networks



The level of challenge in the design of any learning task impacts the amount of glucose our brains burn.



IDEAS TO PONDER

1. How have you seen the balance between support and challenge during a learning task affect the learner's attention and/or frustration levels?
2. Think about how much glucose you may have burned in a learning situation. If it was too much, how did this affect your engagement? What strategies could have been included in the design of a learning experience that would have helped you?
3. In what ways do your current curriculum and instructional materials incorporate the UDL Principles of providing multiple means of engagement, recognition, and action and expression?

FOR YOUR BOOKBAG

- CAST. (2024). About the Guidelines 3.0 Update | CAST UDL Guidelines.
- Gravel, J., & Tucker-Smith, N. (2024). Universal Design for Learning Guidelines: Past, present, and promise. In T. Hall, K. Robinson, & D. Gordon (Eds.), *Universal Design for Learning in the classroom: Practical applications for K-12 and beyond* (2nd ed., pp. 1-27). Guildford.
 - This chapter provides an in-depth discussion of the changes introduced in the UDL Guidelines Version 3.0.
- Meyer, A., Rose, D. H., & Gordon, D. (2024). *Universal design for learning: Principles, framework, and practice*. CAST Professional Publishing.
 - This is an updated revision of the original text by the authors of the UDL framework. It describes the scientific foundations of the UDL framework.
- Sousa, D. A. (2022). *How the brain learns* (6th ed.). Corwin Press.
 - This author translates brain research related to classroom learning, such as information processing, attention, and memory.

- The UDL Guidelines—<https://udlguidelines.cast.org/>
 - Learn about the development of Guidelines 3.0.
 - About the Guidelines 3.0 Update: <https://udlguidelines.cast.org/more/about-guidelines-3-0>
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