



Introduction to Universal Design for Learning

Competency

The educator uses Universal Design for Learning (UDL) guidelines and checkpoints to enhance a unit of study, reduce barriers, and support all students in becoming “expert learners.” Every student—across race, language, disability, and income—deserves access to learning environments that are designed for their success from the start.

Key Method

The educator uses the three UDL principles to analyze a current unit of study and to plan future units.

Method Components

Note: UDL has evolved over time. Version 1 was introduced in 2008, and this micro-credential now uses **Version 3.0 (2024)**. According to CAST, “This expanded version aims to fulfill the promise of the Guidelines as a resource to guide the design of learning environments and experiences that reduce barriers and more fully honor and value every learner.”

Universal Design for Learning

UDL is a framework that guides educators to design engaging, challenging learning experiences for all students. UDL is built on the principles of engagement, representation, and expression to improve and optimize teaching and learning for all students based on scientific insights into how humans learn (<http://udlguidelines.cast.org/>). The goal of UDL is learner agency that is purposeful and reflective, resourceful and authentic, and strategic and action-oriented. Through UDL, students can become “expert learners” who are:

- Purposeful and motivated
- Resourceful and knowledgeable

- Strategic and goal-directed

UDL: Principles and Guidelines

UDL is a research-based framework grounded in neuroscience that examines how three primary neural networks—affective, recognition, and strategic—influence learning. Rather than viewing learner differences as deficits, UDL focuses on intentionally designing environments that reduce barriers and support access for all students. When instruction is thoughtfully designed, every learner can engage in rigorous, meaningful learning.

UDL provides three core principles and practical guidelines that help educators plan instruction across disciplines and grade levels. These are directly aligned with the brain's neural networks and guide educators to offer flexible options for engagement, representation, and expression.

- **Multiple Means of Engagement (Affective Networks):**

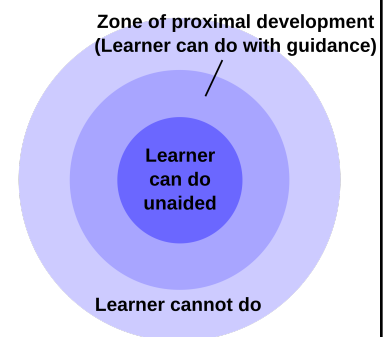
Offers varied ways to engage in learning based on their interests, motivation, and readiness, including opportunities aligned with their **zone of proximal development**.

- **Multiple Means of Representation (Recognition Networks):**

Provides multiple ways to access and understand information, supporting differences in perception, language, and comprehension.

- **Multiple Means of Action and Expression (Strategic Networks):**

Offers multiple ways for learners to demonstrate what they know, supporting diverse strengths in planning, organization, communication, and self-regulation.



Together, the UDL principles and guidelines serve as a flexible planning tool that helps educators design inclusive learning environments where all students can access content, actively participate, and demonstrate understanding in meaningful ways.

Using the UDL Guidelines

The UDL framework includes many research-based strategies, and it's unreasonable to think that one could "UDLize" every single lesson of every day and be effective. Such an approach to lesson planning would overwhelm the students and educators, especially in under-resourced schools. Instead, start by focusing deeply on a few lessons or units.

Examine each of the principles in greater depth to begin adapting your lessons or units through this lens.

Design Multiple Means of Engagement

This principle is about student motivation and attitude toward learning. Drawing on students' cultural and community knowledge, educators plan multiple ways to connect content to student interests and identities. Means of engagement may include:

- Allowing students to choose their topic for a project
- Incorporating real-world situations into the work
- Connecting to student backgrounds and experiences
- Creating opportunities for peer interaction and collaboration
- Focusing on effort and progress to maintain motivation.

Design Multiple Means of Representation

The second principle asks educators to plan multiple ways to share information and build on students' current understanding. Examples include:

- Using alternatives to text-based information such as images, videos, interactives, or simulations
- Displaying video captions
- Providing access to vocabulary
- Using text-to-speech software and devices when decoding and writing isn't the goal of instruction
- Modeling and providing graphic organizers

Design Multiple Means of Action and Expression

This third principle asks educators to plan how students take part in and express their learning. Educators plan multiple ways for students to communicate their thinking, demonstrate understanding, and monitor progress. Examples include:

- Providing technology tools such as keyboards and touch screens
- Supplying task-specific tools such as manipulatives and calculators
- Offering students options for composition such as comics, music, art, or video
- Creating checklists and templates for projects

Designing Instruction

UDL can be used in each phase of planning. We'll examine how to implement it in these four aspects of lessons:

- Goals
- Assessments
- Methods
- Materials

Goals

UDL-aligned goals are clear, but not tied to a single means of instruction or demonstration. Goals can be content- or skill-based, but must be clearly written and communicated to students. Educators share what students will be expected to

do by the end of the lesson and reference it throughout the instruction. Goals can also be co-created with students, which increases their learner agency.

Goals shouldn't prescribe only one way for all students to achieve it. In alignment with multiple means, all goals can be demonstrated in different ways. Using UDL ensures that all students have access and relevant means of expression, which may look different for each student.

Examples from the [CAST.org](https://cast.org), the developer of the UDL framework:

- Students will be able to identify a theme in a grade-level piece of fiction and locate supporting details.
- Students will be able to model and explain the process of mitosis.

Assessment

After defining a clear learning goal, educators design aligned assessments to measure the intended knowledge or skills. Well-aligned assessments help educators monitor student learning, evaluate instruction, and support students in reflecting on their progress. Guided by UDL, educators recognize that requiring all learners to demonstrate understanding in the same way can create barriers. Assessment should occur throughout instruction—not only at the end—and use a range of flexible, accessible formats. The educator identifies likely barriers to success and addresses them when planning assessments.

Types of assessments to consider:

- Formative: continuous feedback used to guide instruction
- Summative: used to measure and evaluate student learning after instruction
- Self-assessments: allow students to evaluate their own learning both during and after instruction

Methods

Educators use a range of instructional methods and proactively remove barriers so all learners have access and agency. Grounded in UDL, effective instruction recognizes that no single method works for every student, so educators intentionally use and adapt a variety of evidence-based approaches. By offering flexible options for engagement, representation, and action and expression, educators allow students to make meaningful choices in how they learn and demonstrate understanding, addressing learner variability and promoting equitable access.

The six common instructional methods below each have strengths and barriers that need to be addressed as you plan for instruction. Each method may look different in each grade level or content, but when barriers are addressed, they can be effective.

- Teacher-directed instruction
- Questioning

- Independent practice
- Discussion
- Cooperative learning
- Project-based learning

Materials

Educators use a wide range of instructional materials on a daily basis, but many traditional, fixed formats—such as printed text, direct instruction, or worksheets—can create access barriers for some learners. Inaccessible materials hinder learning rather than support it. Guided by UDL, educators intentionally select and create flexible materials that align with multiple means of engagement, representation, and action and expression. By offering choices, using varied media, and providing accessible tools and technologies—such as digital text and culturally responsive resources—educators increase student agency and ensure materials meet the diverse needs of all learners.

Some materials that can reduce barriers are:

- Technology tools: may be **assistive** (help students perform tasks) or **educational** (more generally used to enhance teaching and learning) technology
- Multiple formats: both physical and digital materials, graphic organizers, presentation slides, or models for demonstration
- Culturally responsive materials: provide bridges to material by ensuring that they reflect and connect to students' diverse backgrounds and lived experiences

UDL is a broad framework that often requires a shift in thinking and time to learn and implement. Research shows that learners in UDL-based settings outperform those in non-UDL-based settings. Furthermore, this effect was seen in learners with and without disabilities, across age groups, and in all subject areas. (King-Sears et al, 2023)

Supporting Rationale and Research

Al-Azawei, Ahmed, Serenell, Fabio, & Lundquist, Karsten. Universal Design for Learning (UDL): A Content Analysis of Peer-Reviewed Journal Papers from 2012 to 2015. Retrieved July 17, 2018, from

<http://files.eric.ed.gov/fulltext/EJ1104867.pdf>

Caldwell, B., Cooper, M., Guarino Reid, L. & Vanderheiden, G. Web accessibility guidelines 2.0: Guideline 1.3 Adaptable: Create content that can be presented in different ways (for example simpler layout) without losing information or structure. Retrieved July 17, 2018, from

<https://www.w3.org/TR/WCAG20/#content-structure-separation>

Craig, S. D., Gholson, B., & Driscoll, D. M. (2002). Animated pedagogical agents in multimedia educational environments: Effects of agent properties, picture features, and redundancy. *Journal of Educational Psychology*, 94(2), 428-434.

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https://www.researchgate.net/publication/232517863_Animated_pedagogical_agents_in_multimedia_educational_environments_Effects_of_agent_properties_picture_features_and_redundancy

King-Sears, Margaret, Abraham Stefanidis, Anya S. Evmenova, Kavita Rao, Reagan L. Mergen, Lindsay Sanborn Owen, Morgan M. Strimel,

Achievement of learners receiving UDL instruction: A meta-analysis, *Teaching and Teacher Education*, Volume 122, 2023, 103956, ISSN 0742-051X,

<https://doi.org/10.1016/j.tate.2022.103956>

McGhie-Richmond, Donna; Sung, Andrew N. (2013). Applying Universal Design for Learning to Instructional Lesson Planning. *International Journal of Whole Schooling*, v9 n1 p43-59. Retrieved July 17, 2018 from

<https://files.eric.ed.gov/fulltext/EJ1016798.pdf>

The IRIS Center. (2009, 2023). Universal Design for Learning: Designing Learning Experiences That Engage and Challenge All Students. Retrieved from

<https://iris.peabody.vanderbilt.edu/module/udl/>

Resources

Template

[Personal UDL Graphic Organizer](#)

[This link will create a copy for you to use in Artifact 1](#)

[Template from CAST](#)

[Website with additional templates](#)

Universal Design for Learning

[UDL Guidelines](#)

[UDL & the Learning Brain | CAST](#)

[Page 3: UDL Principles](#)

[UDL at a Glance. 4-minute video on YouTube](#)

[CAST | UDL Tips for Developing Learning Goals](#)

[CAST | UDL Tips for Assessment](#)

[CAST | UDL Tips for Designing Learning Experiences](#)

[CAST | Key Questions to Consider When Planning Lessons](#)

[CAST | UDL Tips for Designing Learning Experiences](#)

How Humans Learn

[The Myth of Average, 18-minute YouTube video](#)

[Variability Matters, 4-minute YouTube video](#)

Expert Learners

[Universal Design for Learning](#)

[Top 5 UDL Tips for Fostering Expert Learners](#)

Universal Design for Learning Guidelines

[Graphic organizer setting forth the three UDL principles](#)

Reducing Barriers

[UDL: Reducing Barriers to Learning, 3-minute YouTube video](#)

Submission Guidelines & Evaluation Criteria

To earn the micro-credential, you must receive a passing score in Parts 1 and 3 and receive a proficient score for all components in Part 2.

Part 1. Overview Questions (Provides Context)

250 - 500 words

Please answer the following contextual questions to help our assessors understand your current situation. *Please don't include any information that identifies you to reviewers.*

1. Describe the students you regularly work with, the learning environment in which you teach, and the students that will be impacted by your work on this micro-credential.
2. What is your previous experience with UDL? How will working with UDL lead to improved outcomes for your students?

Passing: Responses provide information about the educator's working context and clearly explain how the educator anticipates using UDL will support students.

Part 2. Work Examples/Artifacts/Evidence

To earn this micro-credential, please submit the following **two artifacts** as evidence of your learning. *Please don't include any information that will identify you or your students to reviewers.*

Artifact 1: Personal UDL Graphic Organizer and Analysis

300-700 words

Using one of the available graphic organizers in the resources, list how you currently use UDL in your lesson design. Respond to all nine sections of the Version 3.0 UDL guidelines.

TIP: On the [UDL guidelines website](#), you can click on each checkpoint to learn more about strategies and the research behind those strategies. There's also a PDF version available on the download page, and a Google copy available in the resources as well.

Analyze your completed graphic organizer, then answer the following questions:

- Do the strategies tend to reside more at the access, support, or executive function level?
- What in your experience has influenced you to rely often on these particular strategies?
- What's the potential impact of incorporating strategies that aren't part of your current practice? Give two specific examples of how a currently unused strategy may support student learning. Refer to a specific student or group from your overview question regarding the context of your classroom.

Artifact 2: Enhanced Unit of Study and Rationale

Complete the following steps for this artifact:

1. Select a unit of study that you'll be teaching in the near future. You may use one that you have stored electronically and edit it or use a hard copy that you'll annotate and scan for submission.
2. Analyze your unit of study, looking specifically for strategies that are included in the UDL guidelines.
3. Use the annotation key below to highlight each UDL strategy and note the level of learning it supports.

Annotation Key:

Strategies	Level of Learning
• Green = Engagement strategies • Purple = Representation strategies • Blue = Action and Expression strategies	• A = Access • S = Support • E = Executive Function

4. After your analysis, identify and add **three** additional UDL strategies to your unit of study. *Use handwritten annotations in the margins (if using a hard copy) **OR** insert and underline (if using a digital copy) to identify the additional strategies (e.g., create cooperative learning groups with clear goals, roles, and responsibilities).*

5. After adding the additional strategies, label the strategies and levels of learning using the annotation key above.

Follow the guidelines below and provide a rationale for each of the three new strategies:

- Restate the strategy.
- Explain why each strategy was chosen (which barrier and learner variability it addresses).
- Predict student response to incorporation of this UDL strategy.

Include your rationale for each strategy as part of your enhanced unit of study document for review.

Part 2. Rubric

	Proficient	Basic	Developing
Artifact 1: Personal UDL Graphic Organizer and Analysis	Eleven or more teaching strategies are listed in the corresponding cells on the graphic organizer Responses to all three questions show a depth of understanding of the principles and purpose of UDL Specific group or student from overview is part of plan Demonstrates a clear understanding of how a strategy may improve student outcome	Eight to ten teaching strategies are listed in the corresponding cells on the graphic organizer Responses to all three questions are included but lack depth Rationale may not be evident Details and examples from classroom experience may be missing	Seven or fewer teaching strategies are listed in the corresponding cells on the graphic organizer All three questions aren't answered Rationale not evident Details not included
Artifact 2: Enhanced Unit of Study and Rationale	All strategies in the current unit of study are highlighted and coded as per the UDL principles Three new strategies are inserted or annotated into the unit of study and labeled with UDL guideline and level All new strategies are restated and followed with an explanation as to the barrier to	Some strategies in the current unit of study are highlighted and coded as per the UDL principles Fewer than three new strategies are inserted or annotated into the unit of study and labeled with UDL guideline and level One to two of the new strategies are listed with an explanation as to the barrier to learning it	Few strategies in the current unit of study are highlighted and coded as per the UDL principles, and no strategies are present All three strategies aren't restated Strategies aren't followed with an explanation as to the barrier to learning it addresses or how

	learning it addresses and how that strategy addresses learner variability in the classroom Predictions of student response to incorporation of each UDL strategy are thoroughly developed with rationale for prediction	addresses and how that strategy addresses learner variability in the classroom Predictions of student response to incorporation of each UDL strategy are generalized	that strategy addresses learner variability in the classroom Predictions of student response to incorporation of each UDL strategy aren't present
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Part 3 Reflection

(300 - 500 words)

Use the word count as a guide when writing your personal reflection on this micro-credential. For tips on writing a good reflection, review the following resource:

[How Do I Write a Good Personal Reflection?](#)

Please don't include any information that identifies you to reviewers.

1. After completing this micro-credential, how will you change your practice when planning future units with UDL? Provide an example from one future unit of study.
2. As you change your approach to unit planning, what impact do you expect on student learning, and how does that connect to the actions/attributes you described for your students in overview question 2?

Passing: All questions are answered completely and clearly describe how the educator will change their unit planning practice using UDL, including a specific example, and the anticipated impact on student learning connected to their students' needs.