

Universal Design for Learning

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What this is

The *Innovative Instructor* is an article series (<https://cer.jhu.edu/ii>) and a blog (<http://ii.library.jhu.edu>) related to teaching excellence at Johns Hopkins

Article categories

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About the CER

The Center for Educational Resources partners with faculty, postdocs, and graduate students to extend instructional impact by connecting innovative teaching strategies and instructional technologies

Center for Educational Resources

What it is

Universal Design for Learning (UDL) is a research-based educational framework that supports the idea that learning environments should be accessible for all, ensuring that every student has an equal opportunity to succeed. Just as the concept of Universal Design (UD) has been applied to our physical environment—i.e. curb cuts, automatically opening doors, etc.—the goal of UDL is to enhance learning experiences by breaking down barriers to learning and building flexibility into the curriculum from the outset. The Center for Applied Special Technology (CAST, <http://www.cast.org>) organization is credited with pioneering the research behind this philosophy.



Why does it matter

Through targeted brain studies, CAST researchers discovered that a person's nervous system is wired individually (much like a fingerprint) and that his/her approach to learning varies widely depending on past experiences and even emotions (Chen, 2008). The results of these studies made it clear to researchers that a standardized learning environment was no longer viable; the diverse ways in which our brains learn imply that educators must provide flexibility in the curriculum to meet the needs of all learners.

How to use it

Based on their research, CAST defines the three main principles of UDL as: multiple means of representation, multiple means of engagement, and multiple means of action and expression. Using these three principles, instructors can implement UDL in the classroom in many ways.

I. Multiple means of representation

The increasingly diverse classrooms of today require that instructors vary the way they present course material. Some students will respond very well to a particular mode of content delivery, such as text or images, while others will do better with an alternative, such as a video or other multimedia presentation. One size does not fit all; as educators, it is important to try and meet the needs of as many learners as possible.

Practical Examples for the Classroom

- Present course content using text, audio, video, verbal, and image formats
- Provide links to supplementary resources

- Use simulations
- Use advanced organizers (e.g. concept maps) to activate background knowledge and connect with present topics

II. Multiple means of engagement

Evidence-based teaching strategies that go beyond the lecture (i.e. active learning strategies) give students an opportunity to engage with content in multiple ways, leading to a deeper level of conceptual understanding and high levels of student success. By employing these techniques, instructors essentially “level the playing field” so that the learning environment addresses the strengths of all learners.

Practical Examples for the Classroom

- Brainstorming
- Think-Pair-Share
- Peer review/collaboration
- Group or class discussion
- Clicker questions
- Inquiry-based learning
- Minute papers
- Polling

III. Multiple means of action & expression




Using a range of formative and summative assessments allows students to demonstrate their mastery of skills in multiple ways. For example, some students may not be strong writers and would do better giving an oral presentation. Some may not have proper motor control for a mouse and would do better with pen and paper. Providing multiple and varied opportunities for students to demonstrate their understanding of content will address the needs of all learners.

Practical Examples for the Classroom

- Include a variety of assessments, such as case studies, quizzes, papers, group projects, presentations, etc.
- Give students a choice of assignment type (poster presentation, research paper, video presentation, etc.)
- Give students a choice of format (paper vs. online exam, writing assignment vs. oral presentation, etc.)
- Use asynchronous technologies to allow for reflection

UDL at JHU

Last year, the JHU Provost's Office instituted the Hopkins Universal Design for Learning Initiative (HUDL, <https://provost.jhu.edu/about/hudl>) to support the use of universal design principles in courses university-wide. HUDL ambassadors (<https://provost.jhu.edu/about/hudl/udlambassadors>) have been selected from each division to guide instructors through the process of implementing UDL principles into their courses. Ambassadors are currently in the process of developing best practices of UDL which will be shared

<p>AFFECTIVE NETWORKS: THE WHY OF LEARNING</p>  <p>Engagement For purposeful, motivated learners, stimulate interest and motivation for learning.</p>
<p>RECOGNITION NETWORKS: THE WHAT OF LEARNING</p>  <p>Representation For resourceful, knowledgeable learners, present information and content in different ways.</p>
<p>STRATEGIC NETWORKS: THE HOW OF LEARNING</p>  <p>Action & Expression For strategic, goal-directed learners, differentiate the ways that students can express what they know.</p>

across divisions. Instructors should feel free to reach out to their respective ambassador at any time for assistance.

Other thoughts

It is worth mentioning that UDL is not the same as accessibility. Accessibility of environments and experiences is the characteristic that measures the usability and opportunity for all individuals, regardless of any person's visible or hidden limitations. An accessible environment is one that has removed barriers for everyone, naturally complementing personalized learning accommodations and services. While implementing UDL works hand-in-hand with accessibility efforts, there are specific guidelines and practices for developing accessible materials and maintaining accessible experiences that go beyond the brain-based research and philosophy of UDL. At JHU, accessibility guidance begins with the Office of Institutional Equity (<http://accessibility.jhu.edu>), supported by each individual School; while Universal Design efforts are spearheaded by the Provost's Office HUDL initiative. To further your understanding of UDL, begin by visiting CAST's site and contacting your HUDL ambassador.

Additional Resources

- Chen, E. (2008). The Importance of Universal Design for Learning. Usable Knowledge, Harvard Graduate School of Education. Retrieved from <https://www.gse.harvard.edu/news/uk/08/12/importance-universal-design-learning>
- Hopkins Universal Design for Learning Initiative (HUDL): <https://provost.jhu.edu/about/hudl>
- The Center for Applied Special Technology (CAST): <http://www.cast.org>

Author's Background

Amy Brusini, Senior Instructional Designer, Center for Educational Resources, JHU



Amy Brusini is a senior instructional designer in the Center for Educational Resources, a teaching & learning center for Home-

wood faculty. She provides instructional design support to faculty and is the editor of The Innovative Instructor Blog. Amy is the HUDL ambassador for the Krieger School of Arts and Sciences and the Whiting School of Engineering.

Celine Greene, Senior Instructional Technologist, Ctr for Teaching and Learning, JHU Sch. of Pub. Health



Celine Greene works with the Bloomberg School of Public Health as their Senior Instructional Technologist where she helps lead oth-

ers toward innovative solutions in online learning. In the fall of 2018 she was named HUDL Ambassador for the School of Public Health, with the goal of assisting JH-SPH faculty in understanding and incorporating the principles of UDL into their curriculum and course facilitation.

Donna Schnupp, Instructional Design Team Manager and EdD Program Lead ID, JHU Sch. of Edu.



Donna Schnupp is the instructional design team manager for the School of Education as well as the manager of the multimedia technol-

ogy and training team. She is also the lead ID for the school's flagship online EdD program, and the HUDL ambassador for the SOE.