



# Assessing accessibility in technical communication courses: A Universal Design for Learning approach

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# Learning outcomes

- Understand the terms *accessible*, *inclusive*, and Universal Design for Learning (*UDL*) in relationship to course design and assessment
- Understand how to design courses, assignments, and assessments using best practices in accessibility, Backwards Design, and UDL to begin to optimize learning and assessment for all learners
- Understand how to overcome some of the challenges in using UDL to improve course design & assessment



SECTION 2

# Assessing accessibility

# Who are the learners we serve?

- IUPUI: Urban campus, mix of international, national, regional, and local students
- Engineering and technology majors, technical communication majors
- Graduate and undergraduate students
- Transfer students from community colleges, adult learners, non-traditional students, and traditional students
- Students who take F2F, hybrid, and online courses



# Defining accessibility in this context

Making improvements to courses for access and success of all learners.

Addressing visible and invisible challenges for learners who

- Have specific and varied learning challenges, preferences, and needs
- Experience temporary or persistent barriers in accessing curriculum
- Experience documented and undocumented (undiagnosed, underdiagnosed, or undisclosed) disabilities
- Have (situational or persistent, diagnosed or undiagnosed) anxiety, depression, or stress

In other words, ALL learners



SECTION 3

# Universal Design for Learning (UDL)

# Universal Design for Learning (UDL)

Affective, strategic, and recognition neural networks

Completely re-designing curricula to optimize learning for all by using

- Affective: Multiple means of **engagement (why)**
- Strategic: Multiple means of **action & expression (how)**, and
- Recognition: Multiple means of **representation (what)**

in instructional design across the curriculum

(CAST, 2018; Tobin & Behling, 2018)



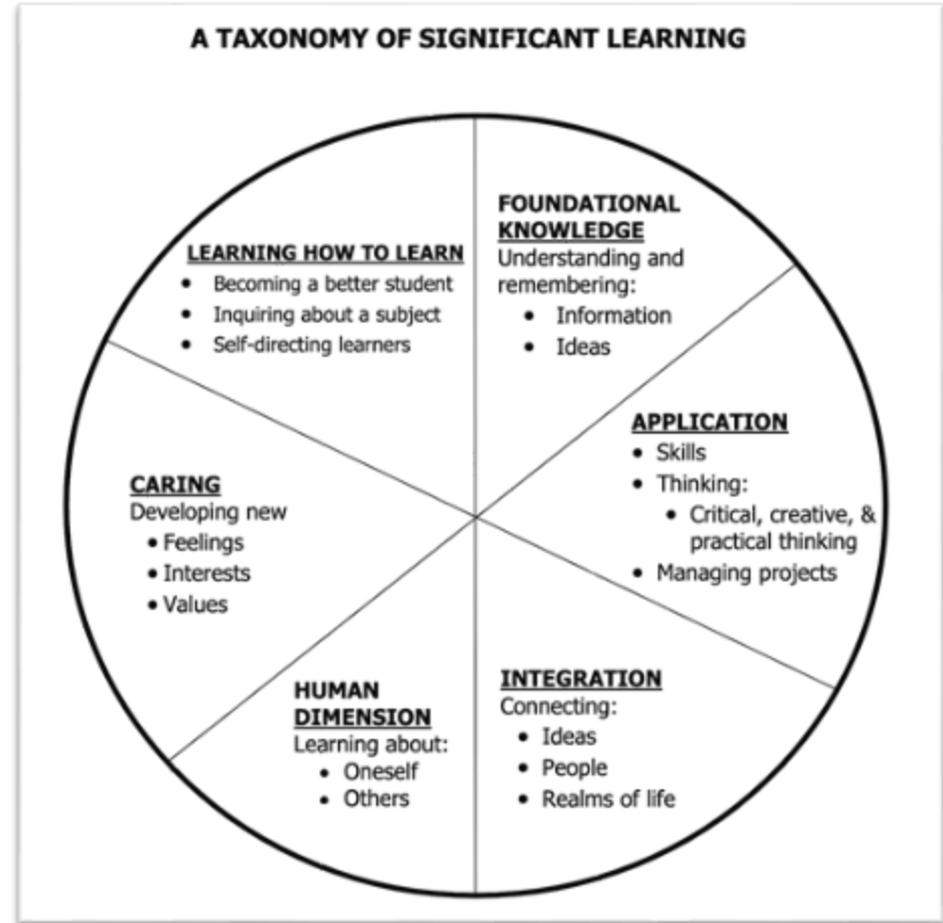
# Assessing our accessibility

- Prompted by multiple semesters with students who needed accommodations for disabilities, we chose to stop reacting, be proactive
- Assessed accessibility in one course, redesigned using Fink's *Taxonomy of Significant Learning* (2013), applied broadly to other courses
- Completely re-designing curricula using backwards design, implementing ideas for small changes with large impacts (Darby & Lang, 2019; Fink, 2013), and using UDL principles to provide an inclusive learning environment for all
- Developing a model to use across the curriculum



# Taxonomy of Significant Learning (Fink, 2013)

- Reviewed learning objectives to ensure that the course would be a *Significant Learning Experience* using Fink's Taxonomy
- Used backward course design
- Re-examined course descriptions, learning objectives, assessments, and learning activities



# Integrating Taxonomy and IUPUI PLUS

Examined objectives  
with Taxonomy and  
the IUPUI Principles of  
Learning for  
Undergraduate  
Success in mind

Skill Category	TCM 21800	TCM 35800	TCM 35900
<i>Develop components of reports</i>	<p>Students will understand and remember the sections of the signature report ....</p> <p>(Foundational Knowledge, PLUS Communicator)</p>	<p>Students apply foundational skills and analyze research as it applies to each component of the report and practice producing effective content.</p> <p>(Application, PLUS Problem Solver)</p>	<p>Students will practice adapting and developing content for different sections of reports. They will understand and remember conventions for producing visuals across report genres.</p> <p>(Foundational Knowledge, PLUS Communicator)</p>
<i>Write clearly and concisely</i>	<p>Students will understand and remember critical reading and editing skills ...at the sentence and paragraph level</p> <p>(Foundational Knowledge, Application, PLUS Communicator, Problem Solver)</p>	<p>Students will build on the foundational skills to apply and value advanced discipline-specific conventions beyond the sentence and paragraph levels ... during the proofreading process</p> <p>(Application, Caring, PLUS Communicator)</p>	<p>Students will continue to make connections between and improve their skills in all levels of discipline-specific editing, revising, and proofreading conventions including writing effective presentation materials</p> <p>(Application, Integration, PLUS Communicator, Community Contributor, Problem Solver)</p>



# Multiple means of engagement

- Help maintain student interest & keep it relevant (CAST, 2018)
- Focus on growth mindset (Dweck, 2015), self-efficacy, and professional identity
- Encouraging self-regulation (CAST, 2018; Darby & Flower, 2019)
- Bring emotion to learning (Eyler, 2018)



# Multiple means of **action & expression**

- Construct relevance – assess the ONE thing you want to assess (ex. lab report, select areas to assess – not the entire rubric in the first assignment, scaffolding – eventually bring it together)
- Alternate assessments where possible (ex. Reflections: video reflections, written reflections, or synchronous meeting oral reflections; develop a website instead of using PPT...)
- Embedded systems and prompts (ex. TILT: Transparency in Learning and Teaching, online Canvas template, including links and attachments, clear instructions, etc.)



# Multiple means of representation

- Accessibility & transparent organization of information
  - Design – headings, layout, color, materials
  - Screen reader optimization
  - TILT assignments
- Build background knowledge, highlight relationships – big ideas *across the curriculum*
- Support learner preferences (audio, video, visual, recorded, written... not using a "one-size-fits-all" approach to assessments or design)

SECTION 4

# Optimizing learning & assessment

# Assessment types in UDL

Accountability – performance, prerequisites, university & program goals

- Principles of Learning for Undergraduate Success

Student progress – look at changes over time, assess learning

- Self-regulation and learning goals (milestones – theirs and ours)

Instruction – student feedback on instruction to improve learning

- Course evaluations (midterm & final), reflections

(Rose, Hall, & Murray, 2008)



# Student progress assessment examples

- TILT assignments (transparency – purpose, task, criteria for success)
- Formative feedback before summative (specifications grading, peer and instructor comments, low-stakes assignments for scaffolding and self-efficacy, specifications grading & oops tokens (Nilson, 2015), quick checks)
- Assessing prior knowledge (reflections, self-assessments)
- Alternative assessments (video, oral, written reflections & rubrics)
- Student engagement rosters (nudges, reminders, high-touch teaching)



SECTION 5

# Successes, challenges, lessons learned

# Successes (anecdotal)

- Impact – TILT assignments – appreciate the clarity, students more autonomous, builds self-efficacy
- Professional identity development (I am/think like an engineer/scientist...)
- Alternate representations & assessments – video reflections, choices, specifications grading, etc.
- Common design template – UDL easy access – removes barriers for instructional design as well as for student access
- Executive functioning and engagement with multiple assignment checks and high-touch teaching and communication (engagement roster, nudges...)

# Overcoming challenges

- We want to learn everything and do it all now: be patient
- It's hard to recover when something new doesn't work well in class: be transparent
- Feedback takes longer: be prepared (but it gets easier and faster)
- Printouts (for braille translations, etc.) require advance preparation - little room for flexibility or change in the moment: be organized
- Not everyone "gets" it – lots of “huh?” responses: be clear



# Lessons learned & next steps

- Smart to start with one course, add related courses in a series, then apply to other courses with an eye to broad adoption
- Collect practical UDL examples to connect with LMS
- Collect more good examples – try new things but they don't always work
- Collect data from the courses and compare with previous course data
- Continue to adapt and improve in all areas

# References and resources

- CAST (2018). Universal Design for Learning Guidelines version 2.2. Retrieved from <http://udlguidelines.cast.org>
- Darby, F. & Lang, J.M. (2019). *Small teaching online: Applying learning science in online classes*. Wiley & Sons, Inc.; Jossey-Bass.
- Dweck, C. (2015). Carol Dweck revisits the growth mindset. *Education Week*, 35(5), 20-24.
- Eyler, J. R. (2018). *How humans learn: The science and stories behind effective college teaching*. West Virginia University Press.
- Fink, L. D. (2013). *Creating significant learning experiences: An integrated approach to designing college courses*. John Wiley & Sons.
- Nilson, L. (2015). *Specifications grading: Restoring rigor, motivating students, and saving faculty time*. Stylus Publishing, LLC.
- Rose, D. H., Hall, T. E., & Murray, E. (2008, Fall). Accurate for all: Universal design for learning and the assessment of students with learning disabilities. *Perspectives on Language and Literacy*, 23-28. Retrieved from [http://udloncampus.cast.org/page/assessment\\_udl](http://udloncampus.cast.org/page/assessment_udl)
- Tobin, T. J., and Behling, K. T. (2018). *Reach everyone, teach everyone: Universal design for learning in higher education*. West Virginia University Press.

What questions do you have?



**Thank you!**

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# References and Resources

## Links

From CAST

- <http://udloncampus.cast.org/home>
- [http://udlguidelines.cast.org/binaries/content/assets/udlguidelines/udlg-v2-2/udlg\\_graphicorganizer\\_v2-2\\_numbers-no.pdf](http://udlguidelines.cast.org/binaries/content/assets/udlguidelines/udlg-v2-2/udlg_graphicorganizer_v2-2_numbers-no.pdf)

UDL on Canvas (LMS)

- <https://www.instructure.com/canvas/blog/universal-design-learning-canvas>
- <http://itg.emerson.edu/word/2018/02/ways-of-implement-udl-principles-in-canvas/>
- <https://community.canvaslms.com/t5/Accessibility/Share-UDL-Course-Design-Tips-Tricks-and-Techniques/ba-p/272725>
- <https://community.canvaslms.com/t5/Instructional-Designer/Universal-Design-for-Learning-Principles-in-Canvas/ba-p/279739>
- Institutions with initiatives in Higher Ed [http://udloncampus.cast.org/page/udl\\_institutions](http://udloncampus.cast.org/page/udl_institutions)

TILT assignments

- <https://tilthighered.com/>
- TILT assignment template  
<https://tilthighered.com/assets/pdffiles/Transparent%20Assignment%20Template.pdf>
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## People

- [Crenguet@iupui.edu](mailto:Crenguet@iupui.edu)
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## Social Media

- @UDL\_OnCampus
- @UDL\_Universe
- @CAST\_UDL
- @ThinkUDL
- @FritzTessa (UDL and Anti-Racism)