

The background of the slide is a vibrant, abstract composition. It features a dark blue gradient at the top and bottom, with a central area filled with intricate, multi-colored patterns. These patterns include swirling bands of red, orange, yellow, green, and blue, interspersed with various geometric shapes like circles, triangles, and squares. The overall effect is one of dynamic energy and complexity, suggesting themes of technology, design, and interconnectedness.

GENAI and Universal Design for Learning in Teaching and Learning

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Located on the traditional, ancestral, and unceded territory of the xwməθkwəyəm (Musqueam) People.



Located on the traditional, ancestral, and unceded territory of the Sylix (Okanagan) People.



The Plan for Today

1. Identify the three key principles of Universal Design for Learning (UDL) and explain how Artificial Intelligence (AI) can enhance these principles to promote inclusivity in education.
 2. Articulate the value of integrating AI into a UDL framework, specifically discussing at least two benefits of AI-UDL integration for enhancing inclusion and accessibility in educational settings.
 3. Demonstrate the ability to incorporate at least one AI-based tool or technique into a lesson plan that aligns with UDL principles.
- 



'Education is not the learning of facts, but the training of the mind to think.'

Albert Einstein

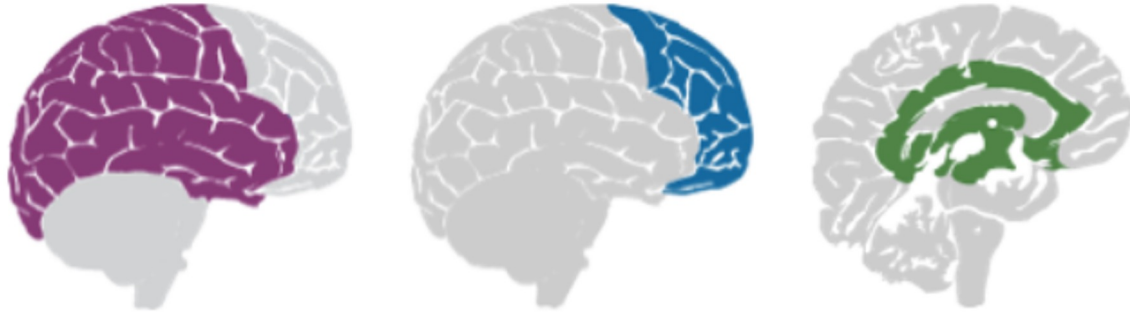




1. Introduction to UDL


What is Universal Design for Learning?

“UDL is a set of principles for curriculum development that give all individuals equal opportunities to learn.”





Why UDL

- [Beyond COVID: the future of teaching and learning](#)
 - UBC Strategic Plan, Indigenous Strategic Plan and Inclusion Action Plan
 - [BC Digital Learning Strategy Report](#)
 - The goal: meeting the needs of all learners and removing systemic barriers
- 



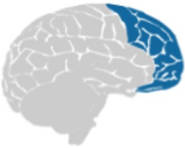
Recognition Networks

Provide multiple means of **Representation**
For resourceful, knowledgeable learners, present information and content in different ways.



Affective Networks

Provide multiple means of **Engagement**
For purposeful, motivated learners, stimulate interest and motivation for learning.



Strategic Networks

Provide multiple means of **Action and Expression**
For strategic, goal-directed learners, differentiate the ways that students can express what they know.

UDL Principles for Effective Instruction




Systemic barriers are policies, procedures, or practices that can prevent individuals from having equal access to a service and fully participating in a situation.





Systemic Barriers Examples

- Unclear learning outcomes
 - One way assessment (i.e. summative assessment only)
 - Providing information in only one way (e.g. no alternative text or media)
 - Classroom/events without wheelchair-accessible tables
 - Expensive textbooks and field trips
 - Lack of transparency and flexibility
- 




2. Introduction to GenAI in the Context of UDL

Tools and Resources

- ChatGPT
- Talkai
- Bing Chat

Worksheet: Follow Along
<https://bit.ly/GENAIUDL>






Generative AI works by analyzing and learning from a vast amount of data to recognize patterns and understand structures. Here's a simple explanation suitable for a slide:
How Generative AI Works:

Learn: It studies vast amounts of data to find patterns.

Understand: It grasps the rules of the data (like grammar for text).


Create: It generates new, similar data (like writing a story).

Improve: It refines its creations based on feedback




Using Generative AI in way that does not **replace** the human and instead amplifies human creativity and problem solving

Augmented Intelligence



Pay to pay inequities
Accessible interface issues
Emerging skill inequities
Equity

Emerging Access issues and Barriers



Content
Assignments/Assessments
Tutoring


Personalization





Image description generated by Be My AI:

The picture shows a young woman sitting on a wooden chair in what appears to be a cozy café with wooden interiors. She is wearing a black jacket and blue jeans, and holding a white paper cup, possibly with a hot beverage. She has a somewhat serious expression on her face. To her right, there is a black Labrador dog standing on the wooden floor, looking directly at the camera. The dog is wearing a guide dog harness and looks serious. On the table next to the woman, there are condiments like salt and pepper, and a red bag of chips. The atmosphere seems relaxed and casual.



goblin.tools

Magic ToDo




Formalizer


Judge


Estimator

Compiler

Chef






About


Magic ToDo






Help ?

Add new item...



+



- Study for an exam 
- ▼ Create a study schedule  
- Gather all necessary study materials  

Goblin Tools




2. UDL and AI

Multiple Means of Representation

UDL encourages presenting information and content in multiple ways to cater to various student preferences and needs. This includes offering content through text, visuals, audio, and interactive experiences.



- 
- Provide text equivalents for podcasts and videos (e.g. captions, transcripts).
 - For your online course and resources, embed support for vocabulary and symbols within the text (e.g., hyperlinks or a glossary page, illustrations, translations).
 - Provide translation sites or links to multilingual glossaries.
 - **Use concept maps to show the link between ideas and topics.**
 - Highlight key information in text, graphics and diagrams.
 - Provide scaffolds that connect new information to prior knowledge

Multiple Means of Representation in Action



Caption

Figure 3.3: This image displayed the results of a field test conducted in 1942 to show the ability of phosphate to encourage plant growth. A phosphate deficiency reduces plant production. Source: the Tennessee Valley Authority

ALT Text

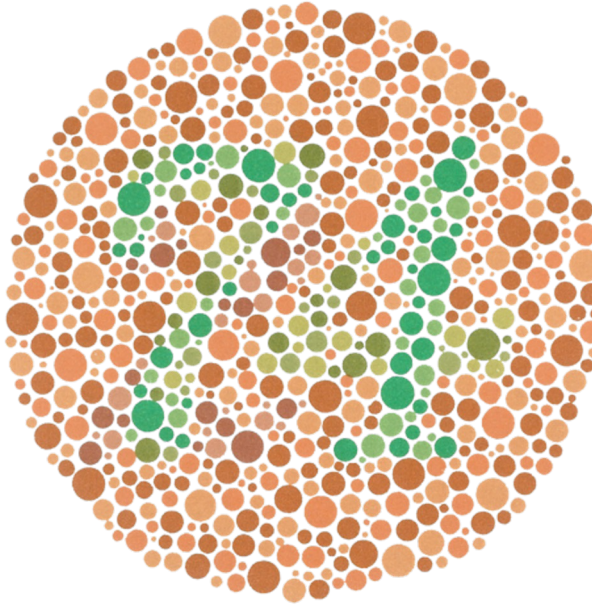
Figure 3.3: This image displayed the results of a field test conducted in 1942 to show the ability of phosphate to encourage plant growth. Two signs designate the experimental treatments. The sign on the left reads “Starved by lack of plant food”. Crops here are stunted or dead. The sign on the right reads “Nourished on phosphate and lime”. Crops are healthy and show vigorous growth.

Describe your Visuals and Transcribe your Media



“Click [here](#) for more information”
is not as clear as
“[Information about Teaching and Learning Fund](#) at UBC is
available online.”

Describe your Hyperlinks and Use Headings



Languages of India

Red = IE - Green = Dravidian

- **Sanskrit**
- **Malayalam**
- **Tamil**
- **Hindi**
- **Sinhala**
- **Kannada**
- ...

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Font Size and Colour Contrast



Provide Multiple Means of
Representation with AI



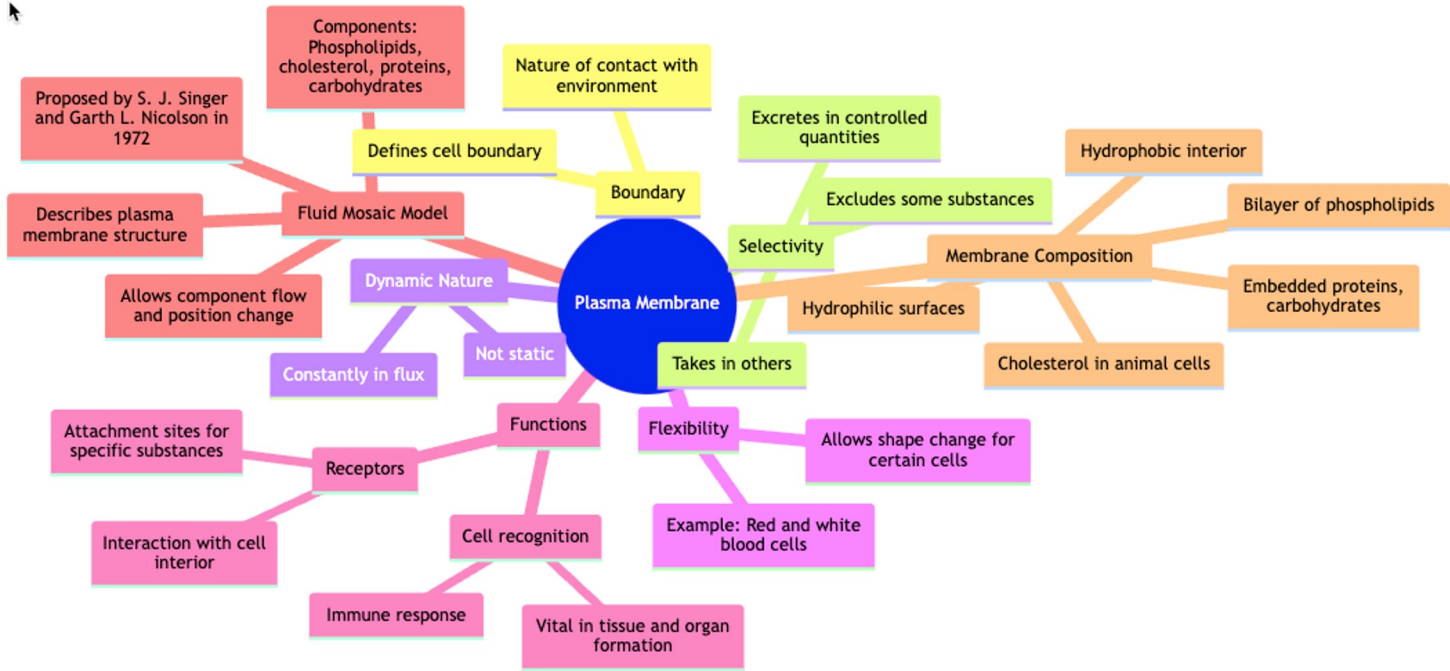



The work of the text is to literalize the signifiers of the first encounter, dismantling the ideal as an idol. In this literalization, the idolatrous deception of the first moment becomes readable. The ideal will reveal itself to be an idol. Step by step, the ideal is pursued by a devouring doppelganger, tearing apart all transcendence. This de-idealization follows the path of reification, or, to invoke Augustine, the path of carnalization of the spiritual. Rhetorically, this is effected through literalization. *A Sentimental Education* does little more than elaborate the progressive literalization of the Annunciation.

Scaffolding and Personalizing learning- DEMO



Alternative Text - **DEMO**





Using the provided text example transform it in as many ways as possible

Create alt text for an image that is concise and descriptive (Use Copilot or GPT)


Create a mindmap with GPT 3.5/4 or Copilot (Note it will take only give you text headings)

Activity 1: Representation

Multiple Means of Engagement

This principle focuses on engaging students and maintaining their interest in learning. It encourages educators to create a supportive and motivating learning environment by providing options for how students can engage with material.




- 
- Invite guest speakers
 - Create a detailed course schedule
 - Create rubrics and community agreement for group work; consider involving students themselves in creating these
 - **Build in peer-to-peer feedback**
 - Allow multiple attempts on exams (when possible)
 - Ask follow-up questions after a lecture, a presentation or a video to ensure understanding
 - Provide feedback that is frequent, timely, and specific

Multiple Means of Engagement in Action



Multiple Means of Engagement and AI







Prompt: Act as a communicating science instructor with a specialization in science communication. Create a rubric to assess third year students blog posts about a citizen science project. The rubric should include the following: a specific list of criteria, gradations of quality based on the degree to which a standard has been met (basically a scale). The gradations should include specific descriptions of what constitutes "excellent", "good", "fair", and "needs improvement". Each gradation should provide descriptors for the performance level. Typically there are 4-6 gradation levels on a rubric.

Prompt to Create a Rubric



Criteria	Excellent	Good	Fair	Needs Improvement
Understanding of the Project	Demonstrates a comprehensive understanding of the citizen science project.	Demonstrates a good understanding of the project with minor inaccuracies.	Demonstrates a basic understanding of the project with some inaccuracies.	Demonstrates little to no understanding of the project.
Clarity of Writing	The post is clear, concise, and well-organized.	The post is mostly clear and organized, with minor issues.	The post is somewhat clear and organized, but has noticeable issues.	The post is unclear, disorganized, or confusing.
Use of Scientific Language	Uses appropriate scientific language and terminology accurately.	Mostly uses appropriate scientific language, with minor inaccuracies.	Occasionally uses scientific language, but with some inaccuracies.	Rarely or never uses appropriate scientific language.


Create a Rubric




Prompt: Evaluate the following blog post based on the rubric and provide suggestions for improvement

Peer to “Peer” Feedback Prompt






Criteria	Score	Comments
Understanding of the Project	4	You've demonstrated a comprehensive understanding of the Backyard Bird Project.
Clarity of Writing	4	Your post is clear, concise, and well-organized.
Use of Scientific Language	3	You've used appropriate scientific language for the most part, but could include more specific terminology related to birdwatching and citizen science.
Engagement with the Audience	4	You've effectively engaged the audience and stimulated interest in the project.
Reflection on Personal Experience	2	You've mentioned your experiences, but could provide more depth and



Peer to "Peer" Feedback



Guest Speakers (Personas)



Have the model create a rubric based on your one of your activities or assignments.

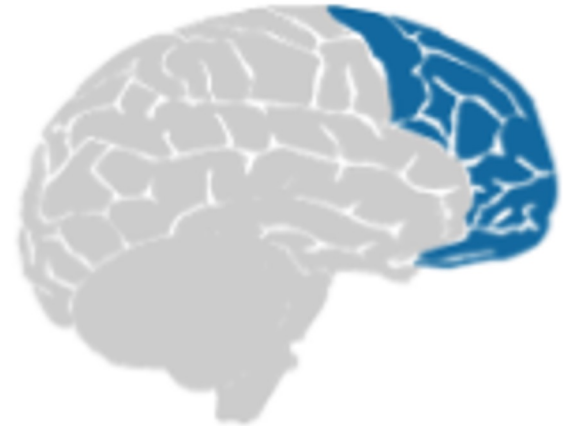
Have the model create a rubric for peer assessment and then based on this rubric correct a paragraph you and provide 'peer feedback'


Create a persona from your discipline

Activity 2: Engagement

Multiple Means of Action and Expression

UDL emphasizes allowing students to demonstrate their understanding and knowledge through various means, enabling them to choose the mode of expression that best suits their abilities and preferences.

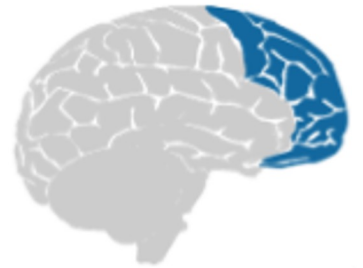


- 
- Provide options for assignment requirements to demonstrate their content knowledge differently.
 - Use multiple tools for construction and composition.
 - Provide sentence starters to prompt students to write self-reflections, peer feedback on other students' work, etc.
 - Provide multi-part assignments with feedback at each stage.
 - **Provide opportunities for mentorship from different sources.**
 - **Provide self-assessment activities with automatic feedback throughout your course where possible.**
 - Provide alternative ways of participating in classroom activities .

Multiple Means of Action and Expression in Action



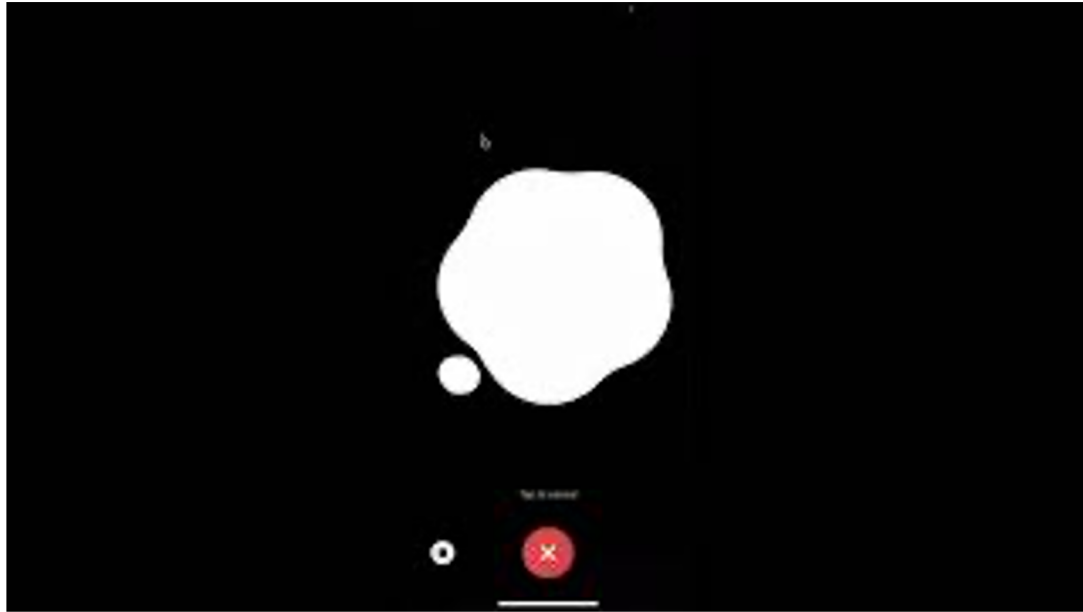
Multiple Means of Action and Expression






Games and Simulations

Please roleplay as MPS 🏰, an educational history simulation game for university classes. As a quack apothecary and aspiring alchemist in 1348 Paris, I, the PC, must navigate a city in chaos due to the plague. Authentic, accurate, gritty, real feeling.



Tutor




Create a game for a topic area in your discipline. The game should involve having your play with or against the AI.

Have the model act as a tutor for you in a subject area in your discipline

Break down a complex assignment into two or three part assignment that includes peer assessment

Activity 3: Representation




Share some ways that you use or can
GenAI to enhance UDL in your
discipline or area.

<https://bit.ly/UDLGENAIUBC>



Ways we are using UDL



Any final thoughts that you would like to share?

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Questions and Thank You!