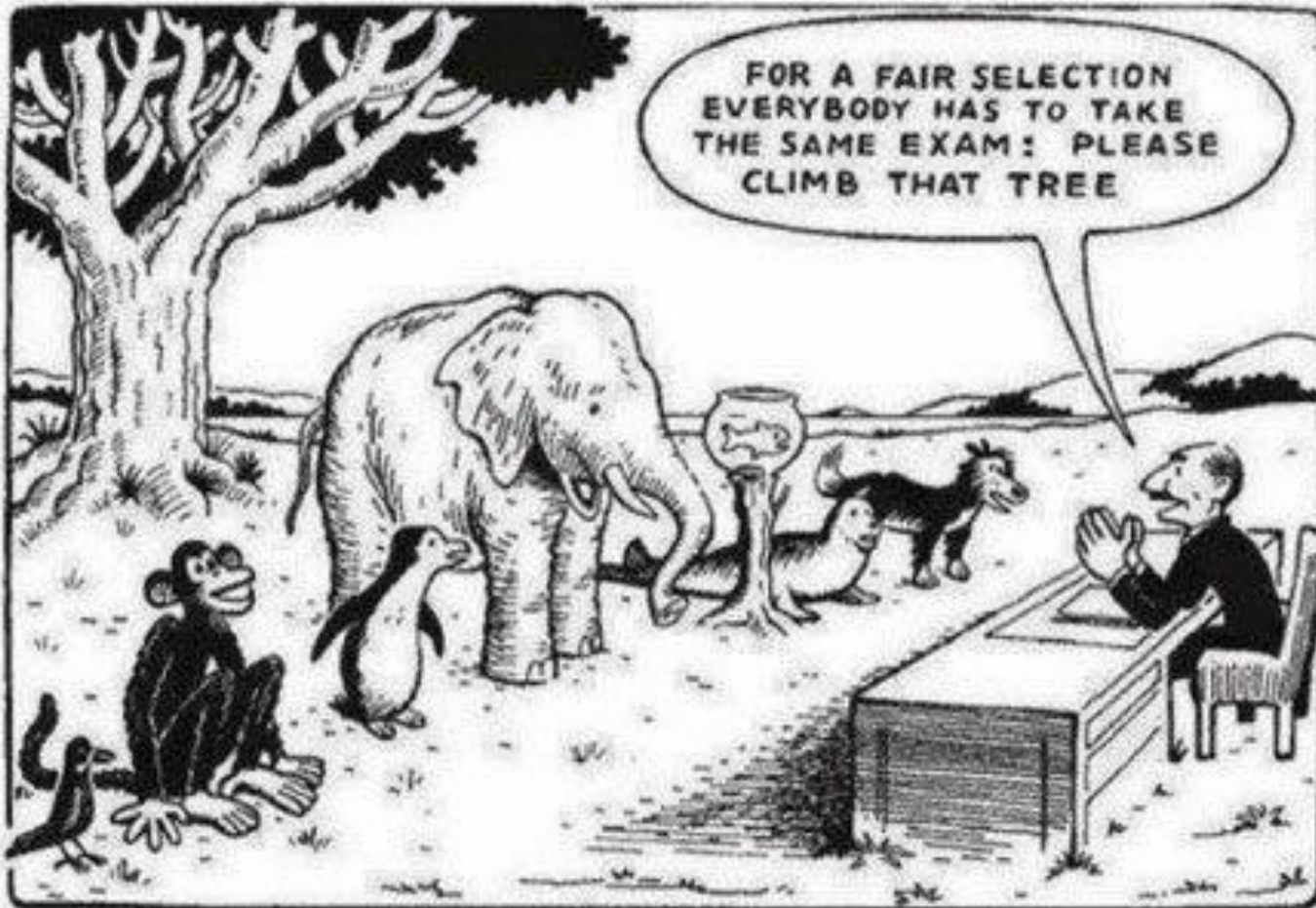


Universal Design for Learning and Inclusion

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- all individuals are unique and learn in ways that are, to varying degrees, particular to them
- science has elucidated the great variability of the human capacity to learn.
- Yet our educational system is designed around the idea that most people learn the same way and that a **“fair” education is an identical one.**



Our Education System

- How does an educator effectively accommodate variability, but ensure that every student is challenged to his or her fullest?
- How does one provide each student with an optimal level of autonomy and independence?

- Instructional Design aims to optimise the *appeal*, *effectiveness* and *efficiency* of instruction learning experiences.
- Learning design focuses on the *teaching-learning process* that happens in a lesson, a unit of learning or a course.
- The key concern of Educational Design is to apply appropriate learning theory to the design of learning materials and learning events to ensure that *learning is maximised*.

- Originally it referred to designing buildings, products and environments that are accessible to all sections of society including the aged and those with disabilities of all kinds.
- ***The 9 principles:***
 - *Equitable use*
 - *Flexibility in use*
 - *Simplicity*
 - *Perceptible information*
 - *Tolerance for error*
 - *Low physical effort*
 - *Accessible size and space for approach*
 - *A Community of learners*
 - *Instructional climate*

- The name of the European initiative associated with ICT inclusive products and e-accessibility (Web Accessibility Initiative/WAI)
- Design for All (DfA) embraces the idea that it is possible to produce ICT goods, which can be accessed to all potential users *without modification*, or, at least products should be easy to *adapt* to different needs, or should use standardized interfaces that can be accessed simply by using AT
- International standardization considers principles of UD, ISO 20282-1:2006 provides requirements and recommendations for the design easy-to-operate everyday products, taking into consideration design requirements for context of use and user characteristics aiming at ease of operation.

- The universal design concept was transferred to the education field and applied to the learning process and learning environment, taking the expression of universal design for learning (UDL)
- Universal Design Learning is a framework for learning that includes all students. Being grounded in socio-cultural theory, UDL views learning environments and social interactions as being key elements in development and learning.
- The *key principles* driving UDL include:
 - flexibility, simple and intuitive instruction, multiple means of presentation, success oriented curriculum, appropriate level of student effort, and appropriate environment for learning.

- **Universal Design for Learning is a set of principles for curriculum development that gives all individuals *equal opportunities to learn*.**
- **UDL provides a blueprint for creating instructional goals, methods, materials and assessments that work for everyone - not a single, one-size-fits-all solution but rather flexible approaches that can be customized and adjusted for individual needs.**

UDL principles

- **UDL framework was first defined by the US Center for Applied Special Technology (CAST) in the 1990s, arguing that the curriculum should fit different learners from the outset, following 3 main principles:**
 - **Multiple means of representation** to give learners various ways of acquiring information and knowledge
 - **Multiple means of expression** to provide learners alternatives for demonstrating what they know, and
 - **Multiple means of engagement** to tap into learners' interests, challenge them appropriately, and motivate them to learn.

Individuals bring a huge variety of skills, needs, and interests to learning. Neuroscience reveals that these differences are as varied and unique as our DNA or fingerprints. Three primary brain networks come into play:

Universal Design for Learning

Recognition Networks

The "what" of learning



How we gather facts and categorize what we see, hear, and read. Identifying letters, words, or an author's style are recognition tasks.



Present information and content in different ways

Strategic Networks

The "how" of learning



Planning and performing tasks. How we organize and express our ideas. Writing an essay or solving a math problem are strategic tasks.



Differentiate the ways that students can express what they know

Affective Networks

The "why" of learning



How learners get engaged and stay motivated. How they are challenged, excited, or interested. These are affective dimensions.

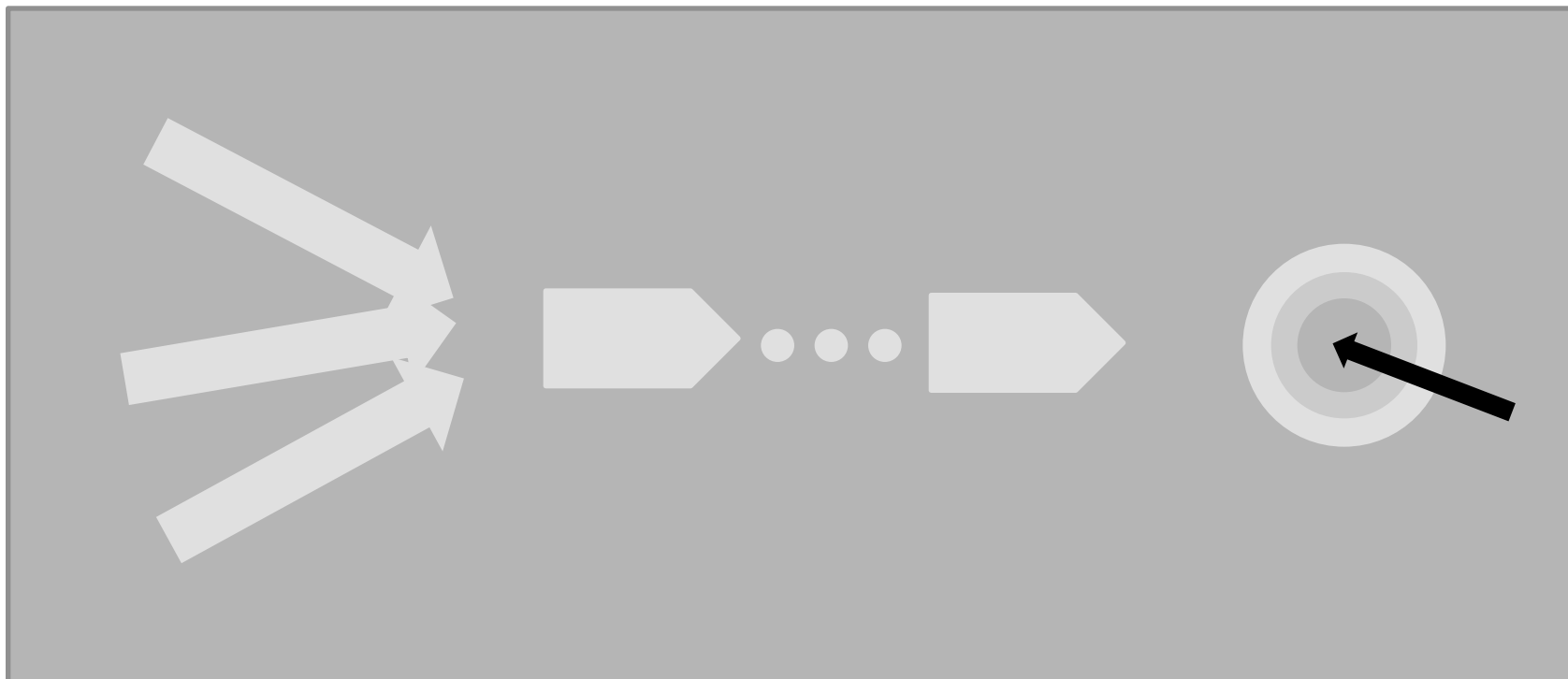


Stimulate interest and motivation for learning

What

How

Why



Resources
of information

Processing

Engagement
(goal)





OPEN
DISCOVERY
SPACE



Recognition Networks



What do you see?

What do you identify?

What information did
you select to process?



OPEN
DISCOVERY
SPACE



Strategic Networks



What intentions do you think the people have?

What do the background and the images tell you?

What interaction between people is taking place?



OPEN
DISCOVERY
SPACE



Affective Networks



What and why would you be interested in this picture?

Why would you spend time looking at the picture?

What emotions do you get from the picture?

The 3 principles of UDL

Principle I

Provide Multiple Means of Representation
The What of Learning

Principle II

Provide Multiple Means of Action and Expression
The How of Learning

Principle III

Provide Multiple Means of Engagement
The Why of Learning

Provide Multiple Means of Representation

help learners gather facts and categorize what they see, hear, and read.

provide multiple means of representation of content.

use graphics and animations,
highlight the critical features,
activate background knowledge,
support vocabulary

so that students can acquire knowledge.

Principle (The How of Learning) Provide Multiple Means of Action and Expression

- **Strategically facilitate learning in planning**
- **Perform tasks to help organize**
- **Express ideas, write an essay or solve a math problem and plan learning**

- Allow and provide students with the options to express what they know
- show them different models, feedback and support for their individual levels of proficiency.

Provide Multiple Means of Engagement

- Engage learners and keep them motivated.
- Keep them challenged, excited, and interested. These are affective dimensions
- Give students plenty of choices to foster their interest and autonomy, help them take risks, make mistakes and learn from them.
- Allow and promote variety of expression

I. Provide Multiple Means of Representation

1: Provide options for perception

- 1.1 Offer ways of customizing the display of information
- 1.2 Offer alternatives for auditory information
- 1.3 Offer alternatives for visual information

2: Provide options for language, mathematical expressions, and symbols

- 2.1 Clarify vocabulary and symbols
- 2.2 Clarify syntax and structure
- 2.3 Support decoding of text, mathematical notation, and symbols
- 2.4 Promote understanding across languages
- 2.5 Illustrate through multiple media

3: Provide options for comprehension

- 3.1 Activate or supply background knowledge
- 3.2 Highlight patterns, critical features, big ideas, and relationships
- 3.3 Guide information processing, visualization, and manipulation
- 3.4 Maximize transfer and generalization

Resourceful, knowledgeable learners

II. Provide Multiple Means of Action and Expression

4: Provide options for physical action

- 4.1 Vary the methods for response and navigation
- 4.2 Optimize access to tools and assistive technologies

5: Provide options for expression and communication

- 5.1 Use multiple media for communication
- 5.2 Use multiple tools for construction and composition
- 5.3 Build fluencies with graduated levels of support for practice and performance

6: Provide options for executive functions

- 6.1 Guide appropriate goal-setting
- 6.2 Support planning and strategy development
- 6.3 Facilitate managing information and resources
- 6.4 Enhance capacity for monitoring progress

Strategic, goal-directed learners

III. Provide Multiple Means of Engagement

7: Provide options for recruiting interest

- 7.1 Optimize individual choice and autonomy
- 7.2 Optimize relevance, value, and authenticity
- 7.3 Minimize threats and distractions

8: Provide options for sustaining effort and persistence

- 8.1 Heighten salience of goals and objectives
- 8.2 Vary demands and resources to optimize challenge
- 8.3 Foster collaboration and community
- 8.4 Increase mastery-oriented feedback

9: Provide options for self-regulation

- 9.1 Promote expectations and beliefs that optimize motivation
- 9.2 Facilitate personal coping skills and strategies
- 9.3 Develop self-assessment and reflection

Purposeful, motivated learners

- **Universal Design for Learning (UDL) is a framework that addresses the primary barrier to fostering expert learners within instructional environments: *inflexible, “one-size-fits-all” curricula.***
- **Inflexible curricula raise unintentional barriers to learning.**
- **In learning environments *individual variability* is the norm, not the exception**
- **UDL addresses learner variability by suggesting flexible goals, methods, materials and assessments that empower educators to meet these varied needs.**

- **Rose & Meyer identify 4 characteristics of digital media that are valuable in designing universally accessible materials. Digital media:**
 - Are **versatile** – content can be displayed in multiple formats and ways
 - Are **transformable** – the media can allow the user to display or modify content so as to present it in different ways based on learner needs or preferences
 - Can be **marked** – elements can be “tagged” in such a way that learners can skip and search content in different ways, and the mark-up can be hidden or displayed
 - Can be **networked** – learning materials can be linked to additional supports so a learner can access additional information or support as necessary

- **The purpose of UDL curricula is not simply to help students master a specific body of knowledge or set of skills, but to help them master learning itself — to become expert learners.**
- **Expert learners have developed 3 broad characteristics:**
 1. strategic, skillful and goal directed
 2. knowledgeable
 3. purposeful and motivated to learn more

- It has proven far easier to help the various stakeholders understand the potential of UDL than it has been to implement UDL on a large scale.
- UDL requires collaborative planning amongst teachers with different curriculum knowledge and skills.

Myths and Misconceptions

1. Should UDL come in a box?
2. UDL is just good teaching.
3. UDL is only for Special Ed or students with disabilities.
4. UDL cannot be done without Computers
5. UDL cannot be done every day in every lesson.

- How do we include at a time of crisis and economic efficiencies?
- How do we distribute resources equitably?
- How do we alter minds, prejudices, inherited bias?
- How do we extend inclusion in an innovative manner?
- How do we establish the primacy of educational vision?

Practice UDL Questions

- how am I going to present a lesson in a variety of modalities?
- how am I going to keep my students engaged in a variety of modalities?
- how am I going to assess in a variety of modalities?

Provide Multiple Means of Representation:

Think about how information is presented to learners

Does the information provide options that help the learners:

- reach higher levels of comprehension and understanding;
- understand the symbols and expressions;
- perceive what needs to be learned

Provide Multiple Means of Action and Expression:

Think about how learners are expected to act strategically and express themselves

Does the activity provide options that help all learners:

- **act strategically**
- **expresses themselves fluently**
- **Respond in a variety of ways**

Provide Multiple Means of Engagement

Think about how learners will engage with the lesson

Does the lesson provide options that can help all learners:

- **regulate their own learning**
- **sustain effort and motivation that engage the interest of all learners**

- Questions
- Ideas
- Things to share



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