Universal Design for Learning: Optimizing learning for all students
Train,
Karen Mateo’s Chesapeake Bay Retriever
Universal Design for Learning (UDL)

- Is an educational framework that recognizes that the way individuals learn can be unique.
- Seeks to develop flexible learning environments that accommodate individual learning differences.
- Based on research in the learning sciences, including cognitive neuroscience.
- First defined by David H. Rose, Ed.D. of the Harvard GSE.
UDL

- Embeds **flexible strategies** into the curriculum **during** the planning process so that all students can access the curriculum.
- This **proactive** approach **reduces the need for retrofitting** accommodations for individual students.
- Curricular and instructional choices are carefully planned so **all students** **to** demonstrate their knowledge.”

*Adapted from the Montgomery School District*
Why bother?

- **One in five** students have learning or attentional challenges, but only about one third of them are formally identified.
- UDL is an approach **benefits all** students.
- The goal is to **remove barriers** to learning whenever possible.
- It is inherently **flexible**, with the understanding that one size does not fit all, and that you need to offer students multiple ways to access information and demonstrate mastery.
- A universally designed curriculum has flexible strategies **frontloaded** as opposed to retrofitted.
COULD YOU PLEASE SHOVEL THE RAMP?

ALL THESE OTHER KIDS ARE WAITING TO USE THE STAIRS. WHEN I GET THROUGH SHOVELING THEM OFF, THEN I WILL CLEAR THE RAMP FOR YOU.

BUT IF YOU SHOVEL THE RAMP, WE CAN ALL GET IN!

CLEARING A PATH FOR PEOPLE WITH SPECIAL NEEDS CLEAR THE PATH FOR EVERYONE!
Reframing “the problem”

- Instead of seeing learning difference as being unique and "problematic" to individual students
- Think about the learning difference as being expected and quite “normal”.
- Is it possible to adapt the environment rather than problematize the student?
The myth of the “average” student

- Variability is normal and expected and occurs for all sorts of reasons
- The range and pattern of variability is quite predictable, making it easy to anticipate and plan for it
How does UDL help?

- UDL increases access for students with regard to:
  - **Multiple means of engagement** to tap into learners' interests, challenge them appropriately, and motivate them to learn
  - **Multiple means of representation** to give learners various ways of acquiring information and knowledge and
  - **Multiple means of expression** to provide learners alternatives for demonstrating what they know
Alphabet soup

- Understanding by Design (UbD)
- Differentiated Instruction (DI)
- Universal Design for Learning (UDL)
How is UDL different from DI?

- In many ways they are similar, and I see them as **being inextricably linked**.
- That said, you are **NOT** asked to create multiple activities or assessments.
- Rather, you create **flexible** learning opportunities which allow students to interact with curriculum materials in a way that is best suited to their learning strengths and preferences.
- UDL planning makes learning available to the **class as a whole** instead of designing specific accommodations for just a few individual students after the curricular planning is completed.
Is UDL compatible with DI?

○ “Yes. UDL does not replace or negate the principles of differentiated instruction, but places more emphasis on readily available technology and accessible curriculum materials to meet the needs of diverse learners.”

● HIAS, Montgomery School District, Maryland USA
How does DI help facilitate UDL?

- **Increasing choice and voice** through Differentiated Instructional techniques
- Using menus/Learning Contracts/Tic-Tac-Toe
- Students are offered, and can suggest different options for the final product, but **all products are evaluated with the same key criteria.**
Therefore,

○ UDL provides a broader lens through which to evaluate effective instructional practices with a mind toward

○ frontloading strategies during the planning process and

○ building the metacognitive skills of students so that they can identify which instructional practices work best for them, thereby

○ ensuring that those practices are available to ALL students instead of a selected group
UDL Curriculum Planning Checklist

○ Goals
○ Students
○ Instructional Methods
  ● Multiple means of representing information
  ● Multiple ways to support understanding
  ● Multiple ways to engage and motivate students
○ Materials
  ● Do materials present any barriers to learning?
  ● Do materials leverage strengths?
○ Assessment
  ● Multiple means to demonstrate mastery?
  ● Does the assessment present any barriers to students?

Adapted from www.cast.org
Clarifying goals for learning

- Establish what is negotiable and what isn’t
- Do not confuse goals with methods
- What are the enduring understandings?
- What would be important for students to know and do?
- What is worth being familiar with?
Who are the students in front of you?

- Developing a Learning Profile for your class:
  - Who are the proficient writers? The reluctant ones?
  - Who are the very verbal students? Who are the reticent ones?
  - Who feels comfortable with ambiguity? Who does not?
  - Who are the “wiggly” ones?
  - Who needs additional support?
Why is this important?

- We are teaching people, not content.
- Create a culture of acceptance/expectation of difference
- Who we teach will inform how we teach.
- Ask:
  - What barriers to learning might exist in my class?
  - What springboards to learning might exist in my class?
  - Anticipate these and plan accordingly!
Order of Operations

1) Define flexible, clear **goals**

2) Consider **learner variability**.

3) Determine appropriate **assessments**.

4) **Select** methods, materials, and media.

5) **Teach and assess** learning.

6) **Reflect** and **refine**.
Anticipating different learning needs

- Over time we see students who need:
  - Extra time
  - Use of a computer
  - Breaking things down
  - Intermittent deadlines
  - A notecard for rote information
  - E-texts
So, how do we plan for this proactively?

- What is essential for some students?
- And helpful to most students?
- Now that we have developed knowledge of, and empathy for our students, let’s come up with possible ways to support their learning.
Lab Safety

When you perform an experiment at home or school, your first priority should be your safety and the safety of those around you. When you experiment at school, ALWAYS follow your teacher’s or the book’s instructions and NEVER try anything on your own without asking the teacher first.

Complete each of the important safety tips below with a word or phrase from the box. Each word or phrase will only be used once.

<table>
<thead>
<tr>
<th>organized</th>
<th>flame</th>
<th>glassware</th>
<th>wash</th>
<th>cords</th>
</tr>
</thead>
<tbody>
<tr>
<td>long hair</td>
<td>clean up</td>
<td>directions</td>
<td>well-lit</td>
<td>taste</td>
</tr>
<tr>
<td>ask questions</td>
<td>teacher</td>
<td>eat or drink</td>
<td>shoes</td>
<td>sharp</td>
</tr>
<tr>
<td>safety goggles</td>
<td>broken glass</td>
<td>closed</td>
<td>live plants or animals</td>
<td>spill</td>
</tr>
<tr>
<td>lab materials</td>
<td>unapproved</td>
<td>safety equipment</td>
<td>heat-resistant gloves</td>
<td>apron</td>
</tr>
</tbody>
</table>

1. Always __________ your hands before and after an experiment.
2. Read all __________ before beginning the experiment and ask questions if you are unsure of directions.
3. Keep your work area neat and ____________.
4. Know the location of ____________ and how to use it.
5. Always wear ____________ when working with chemicals, burners, or any substance that may hurt your eyes.
6. Never touch, ____________, or smell any chemical.
7. Be careful not to ____________ any materials. If a spill does occur, clean it up immediately.
8. Never reach across a ____________
9. Pull back ____________ and push up sleeves.
10. Have an adult handle ______________ objects such as knives or blades.
11. Always work in a ____________ and well-ventilated area.
13. Always use the tongs, clamps, or ____________ when moving hot containers.
14. Never use broken or chipped ______________.
15. Dispose of ______________ or other sharp objects in the proper container.
16. Notify the ______________ immediately if you are cut, burned, or otherwise hurt.
17. ______________ your work area when the experiment is completed.
18. Return all ______________ to their proper location when the experiment is completed.
19. Never perform unsupervised or ______________ experiments.
20. Wear an ______________ to protect yourself and your clothes from chemicals.
21. Wear closed-toe ______________ when performing experiments.
22. Make sure appliances are working properly and keep ______________ untangled and out of walking paths.
23. Handle ______________ with care and never be cruel or harm living creatures in an experiment.
24. Make sure you know how to use all of the equipment and ______________ if you don’t.
25. Wear ______________ to protect your hands when handling live animals, plants, or chemicals.
26. Do not ______________ while completing an experiment.

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Limitations of the worksheet

- Read printed text (decoding issues = slow, inaccurate reading)
- No vocabulary support (may not understand some words)
- Requires handwritten response (may be slow, illegible, cognitively taxing)
- Closely-spaced lines, fixed space for response (handwriting issues, visual-spatial issues)
- Must get it right the first time (errors = erasures, cross-outs)

Adapted from Shelley Haven www.techpotential.net
The alternative: Accessible digital worksheets

- Accessible e-text (listen with text-to-speech software)
- Access to digital dictionary, translator (help understand unfamiliar words)
- Hyperlinks to supporting info
- Audio record spoken instructions
- Print for students who prefer to handwrite responses
- Respond by typing, speech recognition, recording voice (legible, available space not an issue)
- Access to writing supports such as spelling/grammar checkers, word prediction, text-to-speech (proof-listen to own work)
- Quicker, simpler, neater editing
- Make **digital worksheet** the “**definitive version**”
- **Paper worksheet** becomes a “**derivative version**”
UDL and the use of technology

○ While technology is really helpful to the UDL cause,
○ UDL is **NOT** just about technology
○ Teachers can/should employ no-tech or low-tech **options**, too.
○ UDL is about providing **multiple means of representation, engagement and expression** so that all students can learn.
○ It’s about **flexibility** in teaching and giving students choice and voice
○ Whether you use technology to do so is not important.
Increased access to information:

- **Low tech solutions:**
  - Dysleksie font
  - Color coding
  - Lots of white space
  - Enough room for answers
  - Picture clues
  - Large font
  - Word banks
  - Matching
  - What else?
Why then is technology so central to UDL?

- Easier to implement UDL principles
- Digital materials are malleable (size, colors, spacing, organization, formats)
- Instruction can be captured, converted, reviewed
- Typing instead of handwriting
- Recording instead of handwriting
- Spellchecking
- Word prediction
- Talking dictionary
- Easy editing
- Easier to scaffold
- (highlight points, add instructions, link to supporting info)

Adapted from Shelley Haven www.techpotential.net
Technology increases access to information

- **Additional High tech solutions:**
  - Clean scans that are more readable
  - Read and write
  - Kurzweil
  - Memberships to organizations for students with print disabilities
  - Livescribe pens
  - Notability
  - Executive Functioning tools
Maintaining Goals and Standards

- A reminder that need to be sure we are aligning curriculum, instruction, and assessment.
- We may offer students different options for showing what they know, and how they know it, but we use the same criteria for judging their responses (accuracy, thoroughness, including various elements).
- Therefore, criteria are derived from the content goals and not from the response mode.
Finally,

Our educational system is designed around the idea that most people learn the same way and that a “fair” education is an identical one.

However, learners are highly variable, but that variation is not chaotic.

Instead of ranking and sorting our students, and deciding who is smart and who is not; who is learning disabled and who is not...

**We should be designing learning environments that are flexible and accessible and goal driven, and that make space for the normal variability we expect to see in our students.**
To read more:

www.ascd.org/publications/books/101042.aspx
www.techpotential.net
www.cast.org

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