Normalizing Adaptive Technology in the Classroom

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Goals

1. Develop enlightenment towards understanding the struggles of others in the classroom.
2. Engage in clarifying the use of adaptive technology in learning environments.
3. Provide excitement at the thought of accessibility & technology.
4. Remove stigmas associated with the use of adaptive technology.

Know The Law: Section 508 of the Rehabilitation Act of 1973

- In 1998, Congress amended the Rehabilitation Act of 1973 to require Federal agencies to make their electronic and information technology (EIT) accessible to people with disabilities. The law (29 U.S.C § 794 (d)) applies to all Federal agencies when they develop, procure, maintain, or use electronic and information technology. Under Section 508.
- Revision: On January 18, 2017, revised ICT standards and guidelines created by the U.S. Access Board (generally referred to as the “Section 508 Refresh” or “the Refresh”) were published in the Federal Register. The revised standards and guidelines modernize the approach of standards application, and harmonize with international voluntary consensus standards and Section 255 of the Telecommunications Act.

Philosophy of Approach

- Changing one's mindset to viewing using assistive/ adaptive technology in the class as more than an accommodation.
    - Promotes a growth-mindset of learning and healthy social development within the classroom.
    - Technology is a bridge that creates a reciprocal learning experience for all participants.
    - Aligns with the 7 principles of Universal Design.
    - Promotes 3 pillars of Universal Design for Learning

Normalization Process Theory

- Process problems:
  - Focus on the implementation of new ways of thinking, acting and organizing in health care(classroom)
- Structural problems:
  - Considers the integration of new systems of practice into existing organizational and professional settings.
  - Like all theories NPT is built up around a set of constructs - organizing ideas that represent human processes that really happen in the world. But it also presents these in an idealized and abstract form.

Normalization: It’s Not All Theory Is It?

- In this fashion, theory is moving towards application for creating an inclusive environment of learning for students.
- Application to the mind, which converts into accessibility benefiting everyone; dialogue is crucial.
- More than theory; A shift in mental framework.

Understanding the Nature of Adaptive Technology

- Can’t fit people into a box
- Primary users are students with disabilities; Humanizing disabilities
- Outside looking in; identifying the holistic concerns of the student
    - It’s impossible to truly “know” another individual’s experiences, so we must seek understanding
    - Technological needs in the classroom evolve

Application of NPT & AT into the Classroom

Incorporation: Borrowing from NPT requires educators to continuously deconstruct ingrained process, while looking at more innovative approaches.

Implementation: Here we are referring to developing new ways of thinking, acting, and organizing adaptive technology in the classroom environment.

Integration: The mindset here involves integrating new systems of practice into existing classroom settings.

Taking Another Look At the Meaning of Adaptive Technology and Accessibility

- Definition of Adaptive Technology: Sub-category of assistive technology to enhance any services offered to individuals with disabilities.
- Definition of accessibility from the Merriam-Webster Dictionary:
    - Accessibility: Capable of being used or seen
    - Classroom: Specifically focusing on how to translate accessibility into the classroom.
    - By Whom: All students.
    - Addresses multiple elements necessary for the holistic growth of students.

Assistive Technology Defined

The Individuals with Disabilities Education Act (IDEA) of 2004 uses essentially the same definition as the Tech Act, adding an exception that excludes surgically implanted medical devices. An assistive technology device is defined as "any item, piece of equipment, or product system, whether acquired commercially off the shelf, modified, or customized, that is used to increase, maintain, or improve functional capabilities of a child with a disability.

Barriers

- Virtual
  - Zoom: Despite Zoom's challenges, there are some activities that can be simplified through the platform. Zoom allows teachers to share their screens and teachers can see individual students' reactions to certain assignments.
  - Transitioning to a virtual environment: Staffing shortages and limitations on meeting face to face exacerbate those challenges.
- Complexity
  - Don't overcomplicate activities.
  - Acknowledgement that there will be difficulties.
  - New for staff as well; pressure on all sides

Important Reasons to Normalize AT in the Classroom

- Benefits of striving to create an inclusive environment of learning:
  - Student Satisfaction
  - Retention
  - Persistence
  - Inclusiveness
  - Accessibility
  - Holistic growth for all students

How Does It Blend Together?

Incorporating changes that build upon Section 508, the Theory of Normalization, and the Principles of Universal Design plus a huge dashing of an empathetic mindset will lead to collaborative, efficient, effective, and holistic development amongst students.

Reiterate: Continuing to develop goals and processes that align with these items Removes barriers to learning and provides the opportunity for All students to succeed.

Does the Classroom Need Restructuring?

- There is no easy answer to this question:
    - However, we are here to think about what must be done to initiate a positive incorporation of adaptive technology into the classroom.
- Know your allies:
    - Disability Resources Center, Information and Technology Services, Online Services, other disability departments.
- Maintain mental flexibility and fortitude
    - Be prepared for things to not go smoothly; it’s okay.

What Are Potential Complications When Creating Change?

“Although some faculty members may have discussed digital accessibility in the past, they might not be aware of the importance of ensuring it for all students and may not understand that it goes beyond making special accommodations for individual students that specifically request it. Some faculty members might just be overwhelmed by the pressure to rapidly convert to online classes and overlook accessibility, Wiley said. She said institutions can and should "do better" by making investments in software that continuously provides alternative, accessible material formats for students with any disabilities” (Anderson, 2020).

-Cyndi Wiley, digital accessibility coordinator for Iowa State University’s Information Technology Services.

Common Types of Adaptive Technology

- Screen Readers.
- Scan and Read Software.
- Voice Recognition Software.
- Screen Enlargers.
- OCR Scanning Software.

Other Types of Technology

- Alternative keyboards.
- On-screen keyboards.
- Keyboard filters.
- Electronic pointing devices.
- Sip-and-puff systems.

How Does Universal Design/ Learning Fit?

- Brief background: The 7 Principles of Universal Design were developed in 1997 by a working group of architects, product designers, engineers and environmental design researchers, led by the late Ronald Mace in the North Carolina State University.
    - Seven Principles of Universal Design: **Equitable use, Flexibility in Use, Simple and Intuitive Use, Perceptible Information, Tolerance for Error, Low Physical Effort, and Size and Space for approach and use**.
- Narrow our focus to Universal Design for Learning: Representation, Action & Expression, and Engagement
- Summarization of use: The driving factor behind UDL is to use a multitude of teaching strategies to eliminate any perceived barriers to the learning process.

UDL: Representation

- UDL recommends offering information in more than one format.
- Learners differ in the ways that they perceive and comprehend information that is presented to them.
- There is not one means of representation that will be optimal for all learners; providing options for representation is essential.

UDL: Action and Expression

- UDL suggests giving students multiple ways of interacting with the material, allowing the opportunity to demonstrate what they've learned.
- Learners differ in the ways that they can navigate a learning environment and express what they know.
- In reality, there is not one means of action and expression that will be optimal for all learners.

UDL: Engagement

- UDL encourages teachers to look for multiple ways to motivate students.
- Understand that learners differ markedly in the ways in which they can be engaged or motivated to learn.
- There is not one means of engagement that will be optimal for all learners in all contexts.

Normalization +UDL=Environments of Success

- With UDL, information is often presented in more than one way, including text, audio, and hands-on formats.
- UDL encourages teachers to offer different test formats, including oral presentations and group projects, to get a more accurate picture of what students know.
- UDL also looks for different ways to keep students motivated.
- Normalization complements the mindset of UDL:
    - The Application of NPT involves thinking about the relationship between these propositions and real implementation and evaluation problems.

Language Centered around the Use of AT

- Use of amplification devices
- Availability of adapted books
- Patience with the use of student communication devices
- Ensure that visual representations of information is available.
- Provide recorded audio and written notes.
- Accommodations

Inclusive Spaces of Learning

- Another way of framing the essence of what we have covered is that we are advocating for inclusive learning environments.
- It must be acknowledged that when students participant in teaching-learning environments, they are engaging in the intersectionality of social-identity developmental growth amongst their peers.
- Ensuring that no one is excluded from spaces of learning by being proactive, reactive, and adaptive in approach, attitude, and design.

Further Insights

- Reflect on assumptions one may have about adaptive technology
- Encourage engagement and conversation with those that use AT
- Stay open-minded to innovate ways of learning and teaching using AT
- Endorse options for perception, expression, and comprehension of information
- AT is not a panacea for all concerns in the environments of learning.

Key Takeaways

- As a student's schoolwork shifts in nature (especially in remote learning environments), their technology needs may change in response.
- New technology may develop to better address the needs of students.
- Personally practice using the technology; familiar creates ease of use and teachable moments.
- Learn how to use AT devices that may present themselves in the classroom.

Questions

Time for Questions!

THANK YOU!!!!!

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