AWARENESS OF ASSISTIVE TECHNOLOGY IN THE COURSE DESIGN PROCESS CREATES A MORE EGALITARIAN SYSTEM

Presented by:

Humberto Hernandez

Objectives

1. Summarize how Assistive technology is used to create a more egalitarian system in human development.

2. Critique why students with disabilities experience lower levels of class engagement.

3. Evaluate how the awareness of AT affordances allow faculty to assess and remediate course content.

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AGENDA

A brief outline

Introduction

Literature Review

Methodology

Research Findings

Discussion

Limitations and Recommendations

3EO Perspective

References

One-Minute Paper

What I know	What I want to know, would like to know…
	

- **Left side: What you KNOW about the “Assistive Technology and its use in the Course Design process”**
- **Right side: What you WANT to know.**

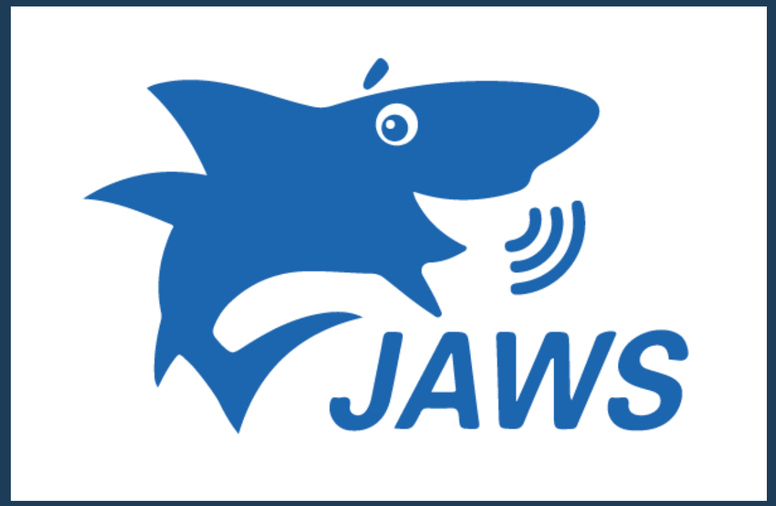
Chat or Q&A: Write what you want to know.

Introduction

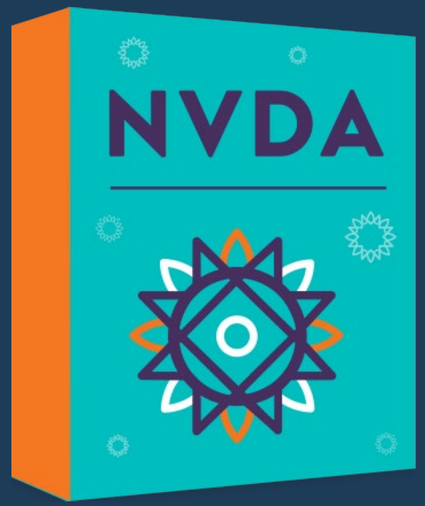
Assistive Technology

- Equipment used to maintain or improve the functional capabilities of an individual with a disability (Individuals with Disabilities Education Act, 2004)
- Grouped into three categories:
  - Low-tech, Mid-tech, High-tech (Ganschow, Philips, & Schneider, 2001)
- AT can increase student's participation in education activities (Alkahtani, 2013)

Most Commonly Used Assistive Technology Tools in Higher Education Settings

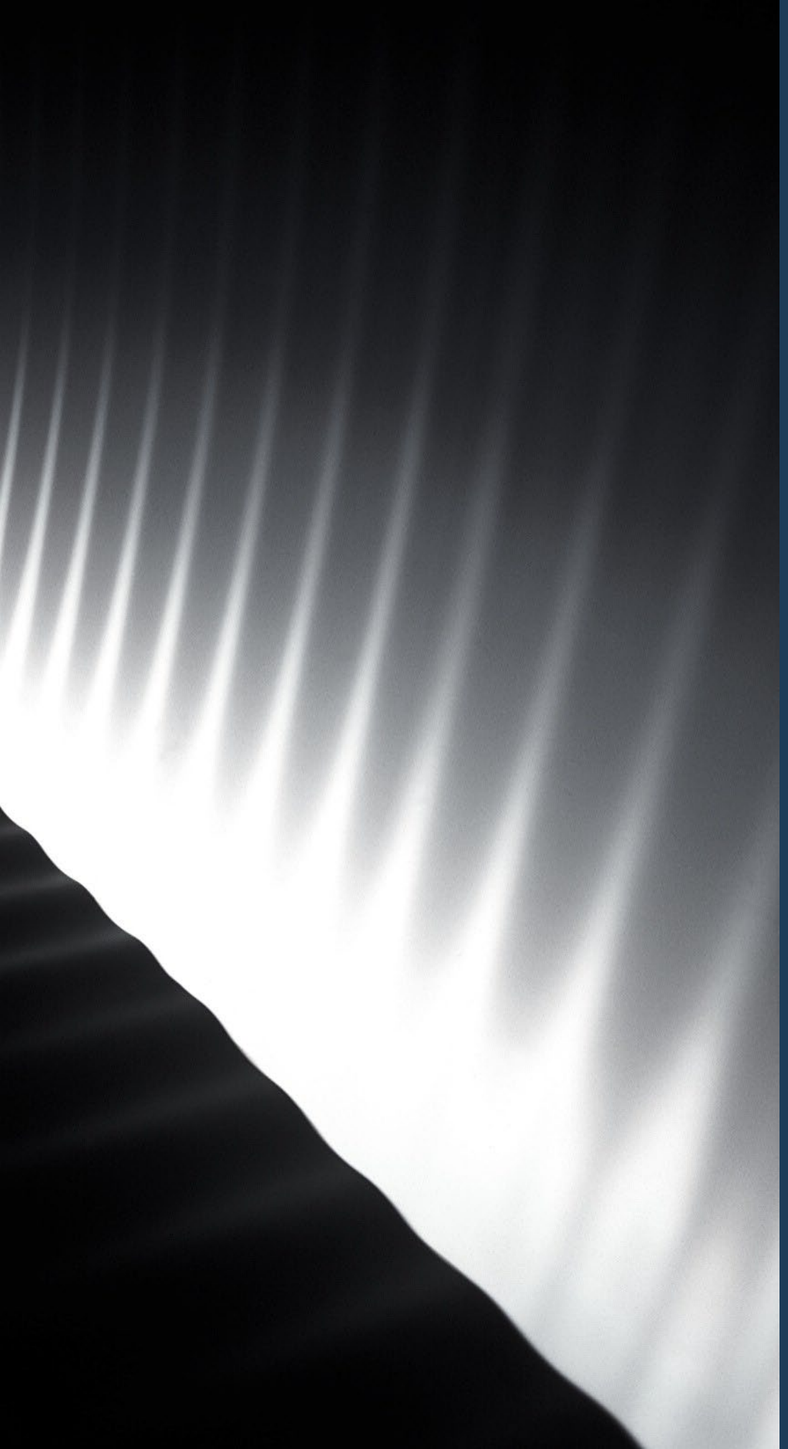


Job Access With Speech



NonVisual Desktop Access

Fusion/ ZoomText



Literature Review

Three Main Themes:

- Higher Education Jurisdictional Framework: Students with Disabilities
- Effective Accommodations for Students with Disabilities
- Universal Design for Learning and its Implications in Assistive Technology

Literature Review: Higher Education Jurisdictional Framework: Students with Disabilities

- People with disabilities have the same rights as any other individual without a disability (U.S. Department of Justice, 2020)
- Two laws ensure equal access to opportunities for individuals with disabilities:
  - The Americans with Disabilities Act (ADA)
  - Section 504 of the Vocational Rehabilitation Act of 1973

One-Minute Paper

What I know	What I want to know, would like to know…
	

- **Left side: What you KNOW about “ADA, Section 504, and their implications in course design and students’ success”**
- **Right side: What you WANT to know.**

Chat or Q&A: Write what you want to know.

ADA vs Section 504

This law is used as a tool to eliminate discrimination and demand the inclusion of disabled students in academic activities. (U.S. Department of Justice, 2020)

Section 504 works together with the ADA to protect individuals with disabilities from exclusion, and unequal treatment in schools. (Crow, 2008)

Section 508

VS

Telecommunications Act

VS

Assistive Technology Act

Law created to eliminate barriers in information technology for people with disabilities.

It requires all educational telecourses to contain closed-captioning for individuals who are hearing impaired.

It provides federal grant funding to generate awareness about assistive technologies via demonstrations, technical assistance, trainings, and advocacy events (Assistive Technology Act, 1998)

Literature Review: Effective Accommodations for Students with Disabilities

- Register with the university's Office of Disability Resources and disclose that they have a disability (National Council on Disability, 2007)
- (1) Timeliness of delivery, (2) accuracy of the translation, and (3) provision in a manner and medium appropriate to the significance of the message and the abilities of the individual with the disability (US Department of Education, 2020)
- Lawsuits have quadrupled against higher education institutions (National Council on Disability, 2007)
- Medical model of disability (Burgstahler, 2005)

One-Minute Paper

What I know	What I want to know, would like to know…
	

- **Left side: What you KNOW about “the medical model of disability and how it relates to course design practices?”**
- **Right side: What you WANT to know.**

Chat or Q&A: Write what you want to know.

Literature Review: Universal Design for Learning and its Implications in Assistive Technology

- The social model of disability (Symeonidou, 2013)
- Universal Design in Higher Education (UDHE) (Burgstahler, 2005)
- The proactive approach to create accessible content (Burgstahler, 2005)
- Reduces the need for individual accommodations (Burgstahler, 2005)
- Solutions that (1) yields universal design that are aware of the requirements of AT and (2) AT that are aware of the affordances of universally designed programs (Rose, 2005)

Literature Review: Universal Design for Learning and its Implications in Assistive Technology Cont.

- Assistive technology users are heavily dependent on affordances (Postolovski, 2013)

Loading….

One-Minute Paper

What I know	What I want to know, would like to know…
	

- **Left side: What you KNOW about “affordances, their importance for the use of assistive technology, and how they are important during the course design process?”**
- **Right side: What you WANT to know.**

Chat or Q&A: Write what you want to know.

Literature Review: Universal Design for Learning and its Implications in Assistive Technology Cont.

- Assistive technology users are heavily dependent on affordances (Postolovski, 2013)

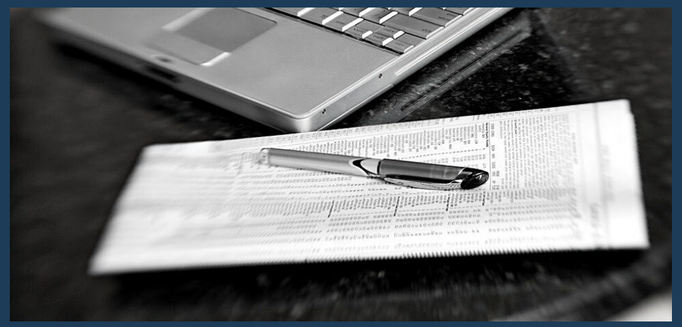
- Test, assess, and remediate course content for students with disabilities.
- Effective accommodations are readily available, when needed.
- Instructors need to be aware of common assistive technologies in the design process.

Methodology

- A survey was collected at a liberal arts college in the Northeast of the United States
- Quantitative Analysis
- The survey addresses specific learning processes current students with and without disabilities experience in the college-level classroom.
- Survey results and literature review argue the need to understand the impact of assistive technology

Research Findings

- Students with disabilities' responses showed significantly lower scores for questions that reflected high levels of engagement, collaboration, and interactions.



Lev's Social Constructivist Theory

Universal Design in Higher Education

Assistive Technology

Research Findings: Lev's Social Constructivist Theory

- Data consistently showed lower-scoring responses compared with the data from non-disabled students.
- One-to-one peer review work, group discussions, and real-time interactions.
- Students with Disabilities (SWD) lack of teamwork in educational activities.
- Effective and timely accommodations help students with disabilities "engage and be part of that learning process" (Walker, 2018).
- Loading...

One-Minute Paper

What I know	What I want to know, would like to know…
	
• Educational system is not inclusive • Educational products are not accessible	Would this outcome/data would’ve been different if AT had been used?

- **Left side: What you KNOW about “SWD lack of teamwork in educational activities?”**
- **Right side: What you WANT to know.**

Chat or Q&A: Write what you want to know.

Research Findings: Lev's Social Constructivist Theory

- Data consistently showed lower-scoring responses compared with the data from non-disabled students.
- One-to-one peer review work, group discussions, and real-time interactions.
- Students with Disabilities (SWD) lack of teamwork in educational activities.
- Effective and timely accommodations help students with disabilities "engage and be part of that learning process" (Walker, 2018).
- Barrier of inclusion for students with disabilities **(still)** exists.

Research Findings: Universal Design in Higher Education

- Information about engagement indicators and interactions between students and instructor.
- Two themes: Learning Traceability and Experiences with Faculty.
- Responses of “often” and “very often” were recorded for learning traceability, perspective-taking, and internalization.
- 100% of students with disabilities replied “never” or “almost never” about whether they worked with a faculty member on activities other than coursework.
- SWD discussed course topics at a lower rate.

Research Findings: Assistive Technology

Extensive research has focused on how individuals with disabilities use enablement devices to have more independent lives.

The NSSE survey did not include, nor discussed, information regarding assistive technology.

Professors lack knowledge and experience with this type of technology (Fichten, et al., 2001)- and that is the problem.

Loading...

One-Minute Paper

What I know	What I want to know, would like to know…
	

- **Left side: What you KNOW about “professors’ lack of knowledge and experience with this type of technology?”**
- **Right side: What you WANT to know.**

Chat or Q&A: Write what you want to know.

Research Findings: Assistive Technology

- Extensive research has focused on how individuals with disabilities use enablement devices to have more independent lives.
- The NSSE survey did not include, nor discussed, information regarding assistive technology.
- Professors lack knowledge and experience with this type of technology (Fichten, et al., 2001)– and that is the problem.
- There is a profound relationship between assistive technology and class engagement for students with disabilities (Alkahtani 2013; Scherer 2004; Rose et al. 2005; Fitchten et al.; Cook & Gladhart 2002; Fleischer & Zames 2001; Burgstahler 2005; Craig et al. 2002; Hasselbring 2005)

Discussion

- Assistive technology is used to create a more egalitarian system in human development.
- Students with disabilities experience lower levels of class engagement.
- SWD almost never work with faculty members on activities like committees, student groups, academic competitions and pre-professional groups.
- Extracurricular activities must be accessible and usable for students with disabilities.
- Be aware of AT affordances to be able to test, assess and remediate course content.
- No AT data at the national assessment level.

Limitations

- Only one institution was canvassed.
- More focus on the use and integration of AT with the learning goals of a given lesson.
- A deeper investigation of the educational activities and practices may have presented a broader understanding of the assistive technology impact.

Recommendations

SUBJECT MATTER

More research is needed to contribute to a more thorough understanding of the impact of assistive technology and its awareness by professors in the process of human development and learning.

BODY OF WORK FOR HIGHER ED PLANNING

Application of these findings would benefit students with disabilities success initiatives and further the understanding of assistive technology and the important role that it has in education and science.

Recommendations Cont.

TRAINING ON AT AND ITS AFFORDANCES

Faculty in higher education may consider learning about assistive technology and its affordances.

AT-BASED QUESTIONS

Add Assistive Technology–based questions to these national assessments to assess the role, and impact, of AT in the success of students with disabilities.

Recommendations Cont.

HIGHER ED DIVERSITY EFFORTS THAT INCLUDES INDIVIDUALS WITH DISABILITIES

Recruitment strategies should include students with disabilities. Efforts have to be perceivable and accessible for them to be effective. 56 million people in the United States have some type of disability (US Census Bureau, 2020)

Be Inspired

"I was inspired to go to law school, and in 2010 I entered Harvard Law School. Harvard told me, "We've never had a deaf-blind student before," and I told Harvard, "I've never been to Harvard Law School before." We didn't have all the answers, but we pioneered our way **using assistive technology** and high expectations. It's okay to not have the answer, **as long as you try**. **Try one solution**. If that doesn't work, try another solution, and we kept doing that, and in 2013 I graduated".

HABEN GIRMA

Try One Solution!

- Find a friend who is an assistive technology user
- Use Assistive Technology
- Take some Accessibility Courses
- Help spread awareness!

Q&A

Let’s Connect!

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Linkedin: /humbertohernandez7

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