

On-Line Learning; Where we've been, where we are, and where the “.....” do we go from here???

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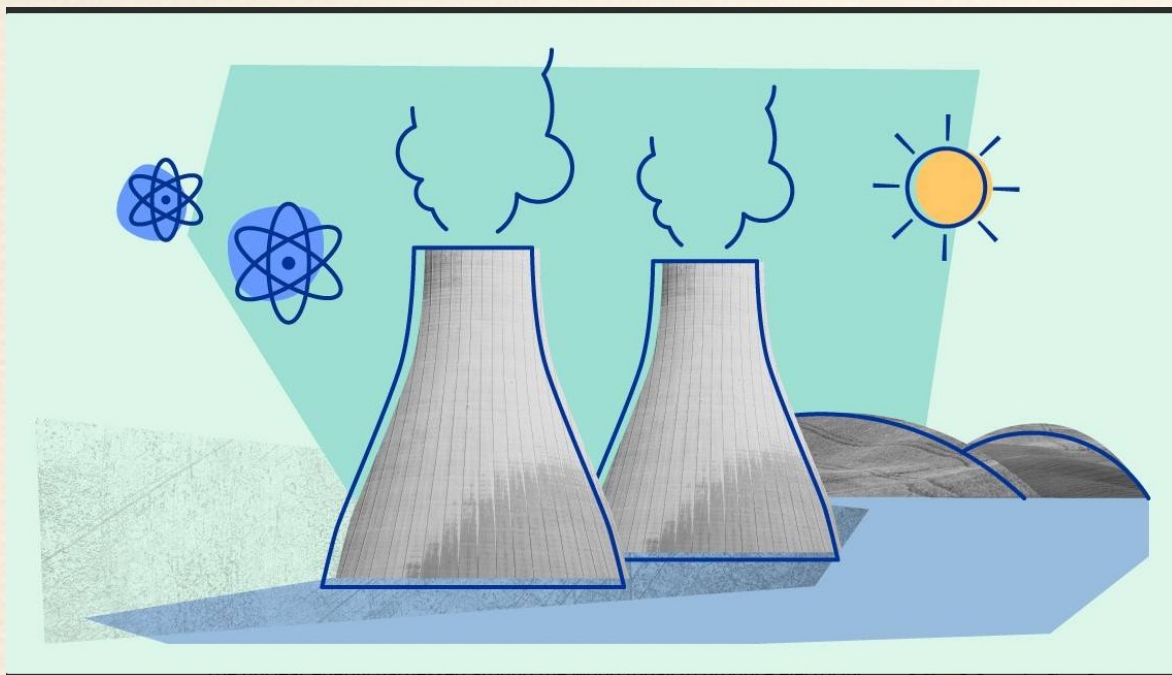


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Tuesday 11/8/2022

- Today
 - Who am I and what do I know about Online learning w/Deaf students
 - My experience
 - Beginnings of Online Education
 - Covid Happened
 - What Now?



Nuclear Energy



Online learning

Beginnings of an Idea...

- ❑ Classroom Instruction Wasn't Enough...
 - ❑ Native ASL user
 - ❑ BS in Mathematics
 - ❑ Certified Secondary Math Teacher
- ❑ Live Video Tutoring proposal
- ❑ Khan Academy... Mastery Learning!

On-Line Math Videos...

- Resources created for hearing students
- Resources created for Deaf Students



So... Why not eat at the buffet?

Sum of two numbers is 70. They
differ by 11. What are the numbers?

Let x be larger number

y be smaller number

$$\begin{array}{r} \textcircled{x} + y = 70 \\ x - y = 11 \\ \hline x = y + 11 \end{array}$$

$$\overbrace{(y + 11)}^x + y = 70$$

((tells us all for life))

It actually said “solve for y ”

Earliest Thoughts...



[Interview \(2013\)](#)

Key Points Still True Today..

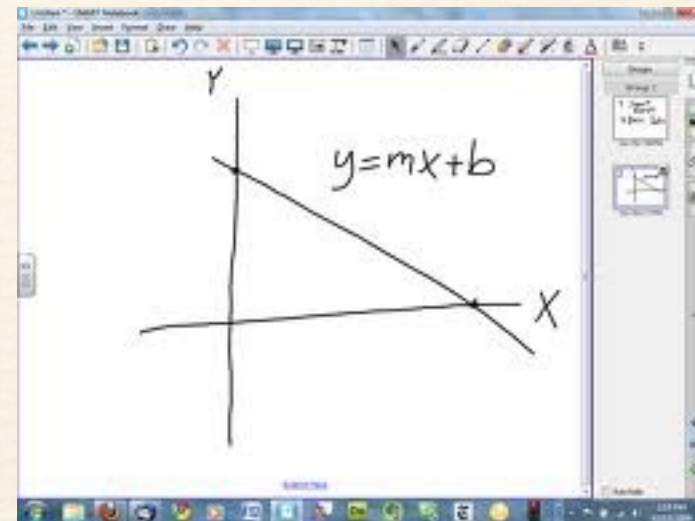
- ❑ Not created as a standalone resource
- ❑ Concepts are explained consecutively between writing and signing
- ❑ The Deaf student is not the only audience

Self Capture

- ❑ Camtasia
- ❑ Wacom Tablet
- ❑ iPad
- ❑ Whiteboard

Software

- ❑ Smart Notebook
- ❑ Open Board
- ❑ MS Paint (PC)
- ❑ Notability



Technical Difficulties...



- Have since vowed to never ever never ever... shoot all of the necessary videos while teaching the course...
...(until next time)



“Flipping”

- Completely “Flipped” one unit
- Taught two semesters in a “Flipped” format
 - Math course: Applications of Algebra
- Captions added by NTID Engineering Department

Students' impressions...

Q: How helpful are the “flipped classroom” style video lectures?

Helpful: “when you use at home... It makes me relax and thinking better, in better way to learn”

Helpful: “hard to take notes”

Not Helpful/Helpful: “It’s helpful to have the video/notes handy but it’s best to have hands on in class”

Students' impressions...

Q: What was the best/worst part of the “flipped classroom style”?

Best: “It’s saved!”

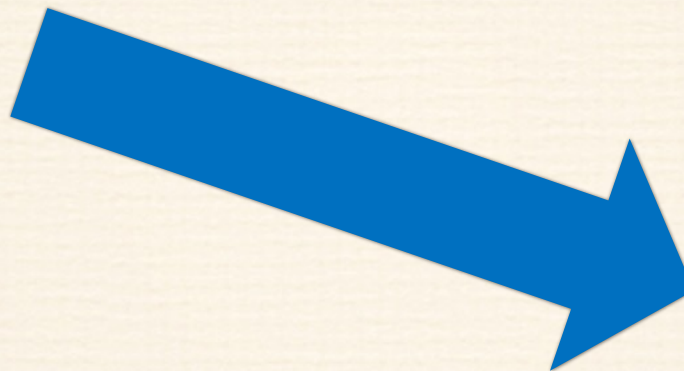
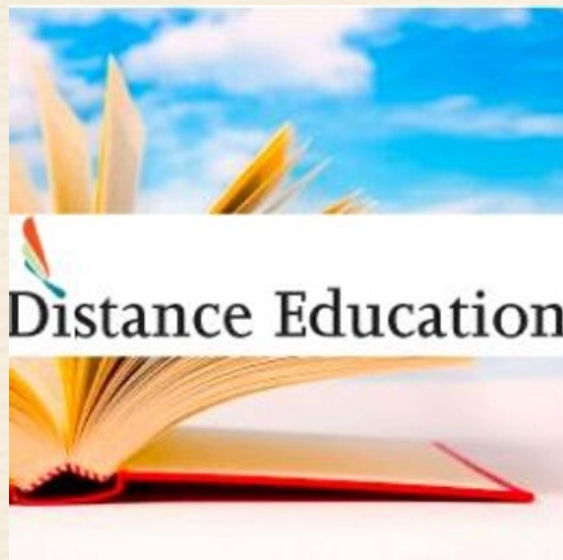
Best: “Makes it clear and good step by step”

Worst: “Some video block your writing”

Worst: “no contact, not learning as much as I did in other class”

Worst: “Graph because it is very confusing”

“Parent Function” for Online Education?



Distance Education → Online Learning

- ❑ Online Education is a new type of Distance Education
- ❑ Individual/Private Era
 - ❑ Earliest Record of Correspondence Course Advertisement 1778
- ❑ Institutional Era
 - ❑ Swedish University 1833
 - ❑ Boston-Based Society to Encourage Study at Home
- ❑ International Era (educating students across international borders)
 - ❑ International Correspondence School 1894
 - ❑ 250,000 students
 - ❑ Radio (1922) and Television (1938)

Beginnings of Online learning

- 1968 ARPANET
 - First version of internet
- 1976 University of Phoenix
 - First “virtual college”
- 1989 Research in Distance Education
 - 1st Publication focusing on distance learning
- ... 2013 60% of four-year private college/universities offer online classes

Online Learning Prior to Covid

- ❑ Roughly 2% growth rate 2016 – 2019
- ❑ \$18.9 Billion in Ed. Tech investments
- ❑ 70% of students taking online courses had no orientation to online learning
- ❑ 30% of teachers who were teaching online had no Teaching, Learning Technology support
- ❑ Khan Academy
- ❑ MOOCs (Massive Open Online Courses)

Then Covid... and ZOOM!



A LONG 2+ Years!!!

- ❑ Forced pivot to online/distance education...
positive and negative effects on education and the development of Ed. Tech
- ❑ Abrupt change meant for many online learning was unorganized and difficult
- ❑ Digital divide (not everyone has access)
- ❑ Spurred growth in online video platforms and voice recognition software
- ❑ Where does it go from here?

Internet = Firehose of Information

Academic Earth, Alison Learning Paths, Better Explained, Bloc Canvas Network, Codecademy, Coursera, Drawspace, edX, Harvard Online Courses, General Assembly, GFC Global, Hack Design, HTML Dog, Instructables, iTunes University, Khan Academy, Lifehack, LinkedIn Learning (formerly Lynda.com), MIT OpenCourseWare, Open Culture, Open Learning Initiative, Open Yale Courses, Oxford University Podcasts, Skillcrush, Skillshare, Stanford Engineering Everywhere, Udacity, Udemy

My Humble Opinion



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Why Create Online Resources then?

- Deaf students who lack access to mathematical language models
- Mainstream Teachers of the Deaf who may lack mathematical background (and are already overburdened)
- Parents of Deaf children (hearing and Deaf parents)
 - Common experience for the child and the parent
 - Math “talk” in the home

Who can benefit?...

- Teachers in Schools for the Deaf
- Itinerant Teachers
- Deaf Students
- Interpreters in Educational settings
- Interpreter Training Programs
- Parents of Deaf students
- Deaf parents of hearing students
- Students with processing difficulties

Your part...

- Be aware of online mathematics resources made for Deaf students
- Explain how these resources are not meant to replace classroom instruction in all situations
- Use the resources with Deaf students
 - Show them how to properly use online resources