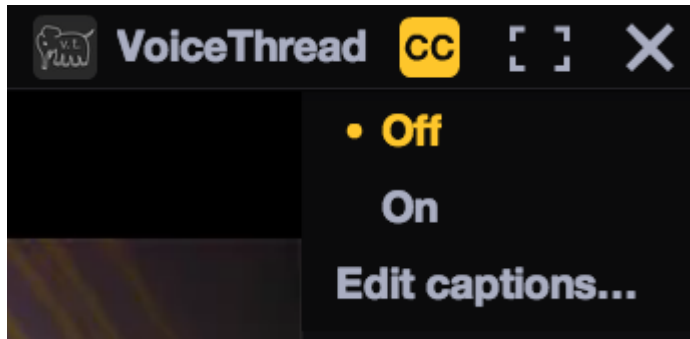




How technology helps disabled students bridge the gap to accessibility

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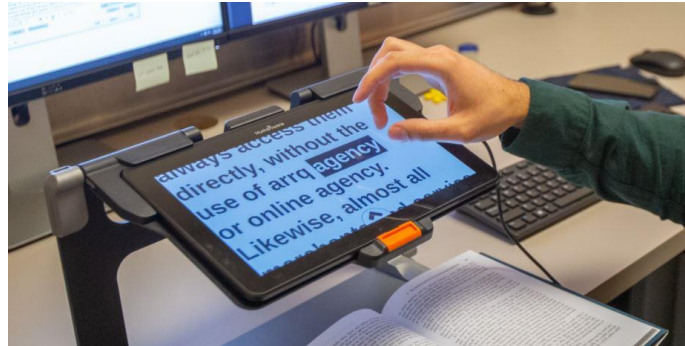
Past



Closed captioning is an example of making videos more accessible to deaf students

Accessibility reached widespread recognition and adoption in the digital age when the ADA act passed in 1990. Section 508 passed in 1998 and required government agencies to make websites more accessible to people with disabilities.

Present



Student using a tablet to magnify and highlight a textbook

Many school districts implement personal laptops or tablets for students to use. These devices can accommodate for learning challenges by with text to speech software or voice control and will only get better over time.

Future



Two students observing a 3D printer

3D printing has wide implications on improving accessibility for disabled students. Printers can create custom braille quickly or make intangible ideas or abstract theories more concrete and perceivable.

Technology in the classroom

“I would have had to plan my life out so much further in advance [without the assistive technology tools],”

– Carlos Garcia

Diagnosed with retinoblastoma at 6 months old



Garcia uses a combination of screen readers, a refreshable braille display, and a tactile drawing board. These tools allow him to access course materials that would have been extremely difficult to procure compared to just a decade ago. These all are instruments which belong to the category of assistive technology—items that improve the daily life of those with a disability—but could be more broadly defined to include technologies like Siri or even spellcheck. Other technology used by students with disabilities includes captioning, dictation software, text-to-speech, electronic magnifiers, large-print keyboards, smart pens, and software that converts musical scores into braille.



The power of the Web is in its universality.

Access by everyone regardless of disability is an essential aspect.

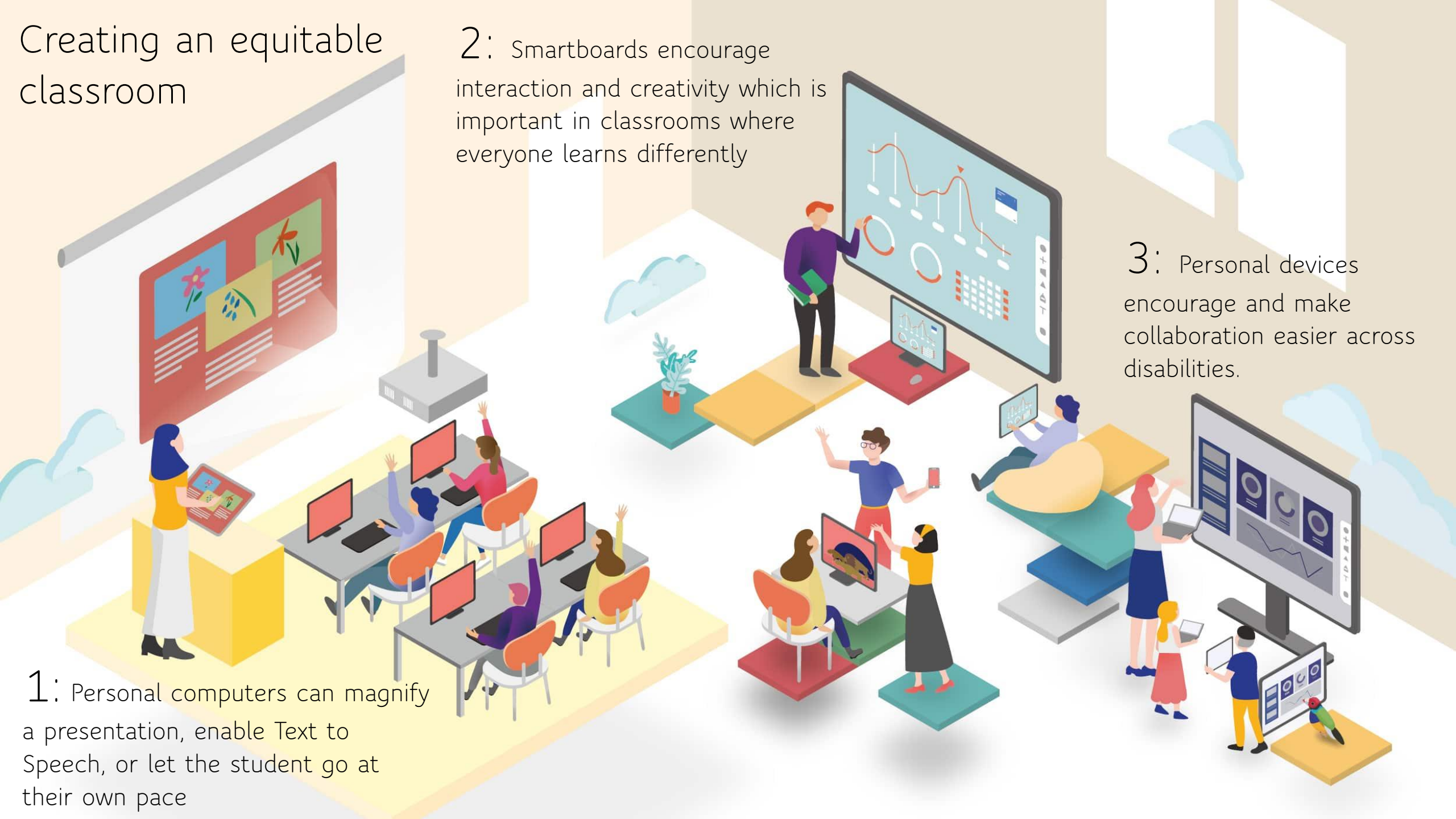
Tim Berners-Lee, inventor of the World Wide Web

Creating an equitable classroom

2: Smartboards encourage interaction and creativity which is important in classrooms where everyone learns differently

3: Personal devices encourage and make collaboration easier across disabilities.

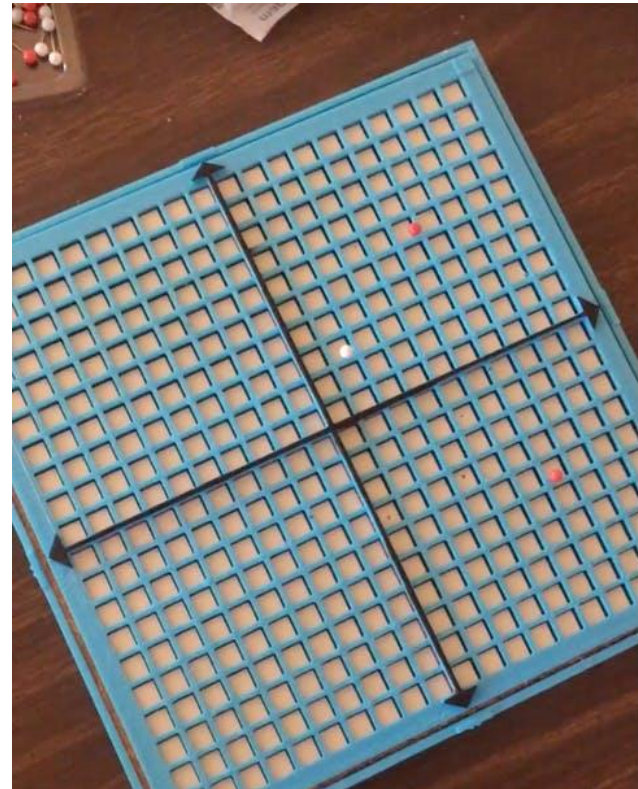
1: Personal computers can magnify a presentation, enable Text to Speech, or let the student go at their own pace



A Teacher's Take

“A fact of life for these students is that they have to deal with the extra burden of getting accessible materials before they can even tackle the content,” says Neal McKenzie. Neal is an assistive technology specialist. He collaborates with teachers and students on specific needs, and finds individualized solutions for the students which help them learn better.

Technology,” says McKenzie, “has leveled the playing field quite a lot. With computer assisted design (3D printing) in particular,” he adds, “it’s sometimes possible to create instant access.”



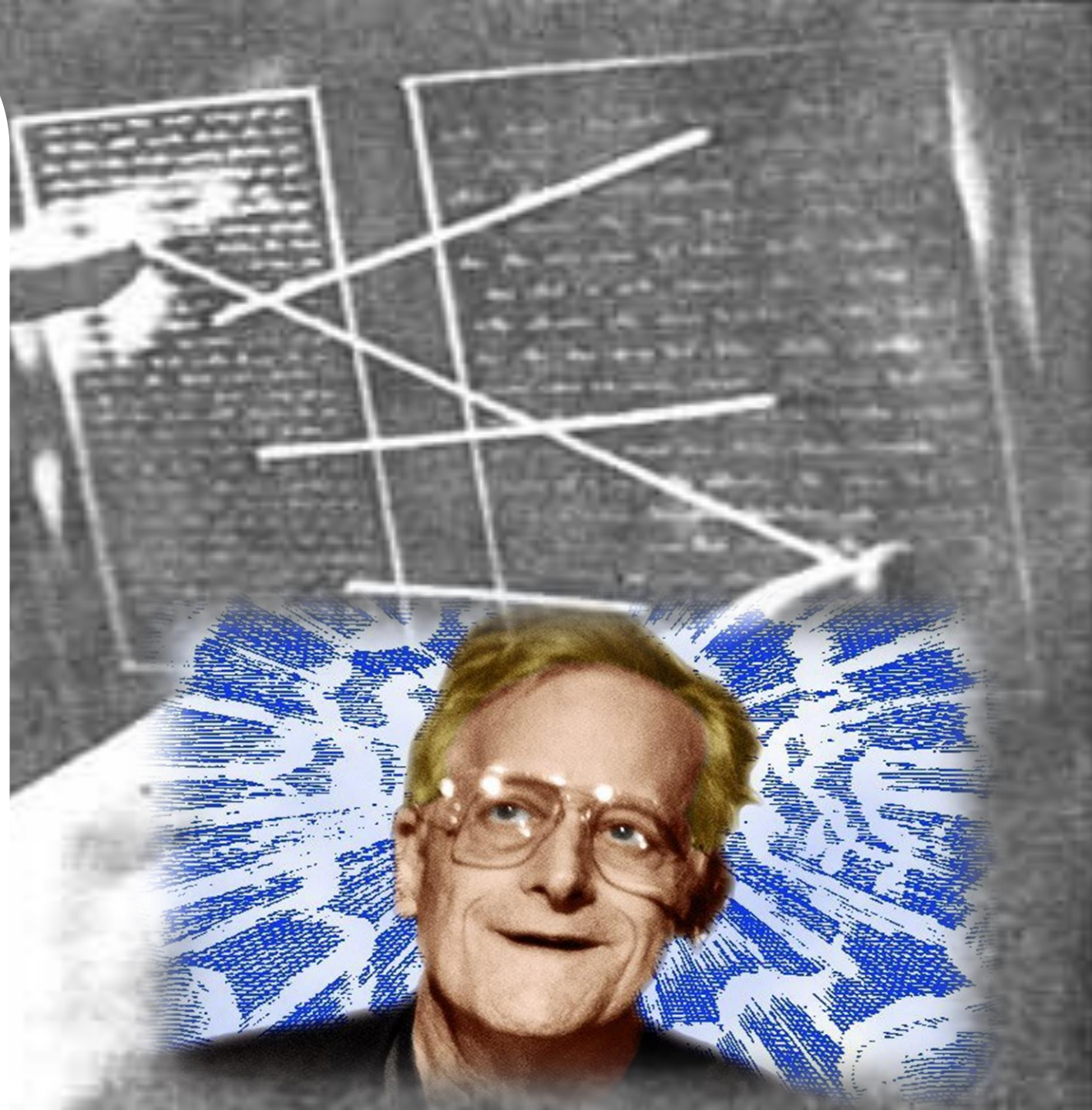
A 3D printed graph Neal McKenzie created for a blind student

Universality

One of Ted Nelson's core beliefs for Project Xanadu was that everything should be available to everyone.

While the World Wide Web did not turn out like Nelson's project, one of the ways it did is the fact that anyone who wants to use the internet can. However, for disabled people the user experience can vastly differ from how a non-disabled person may experience the web. One of the ways we can improve this though is through improving websites to make them more accessible spaces. Incorporating features like including proper captions or subtitles for videos and images, using color with care, and organizing headers properly.

The idea of web universality unifies these two concepts with a goal to provide an equitable experience to everyone on the web.



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