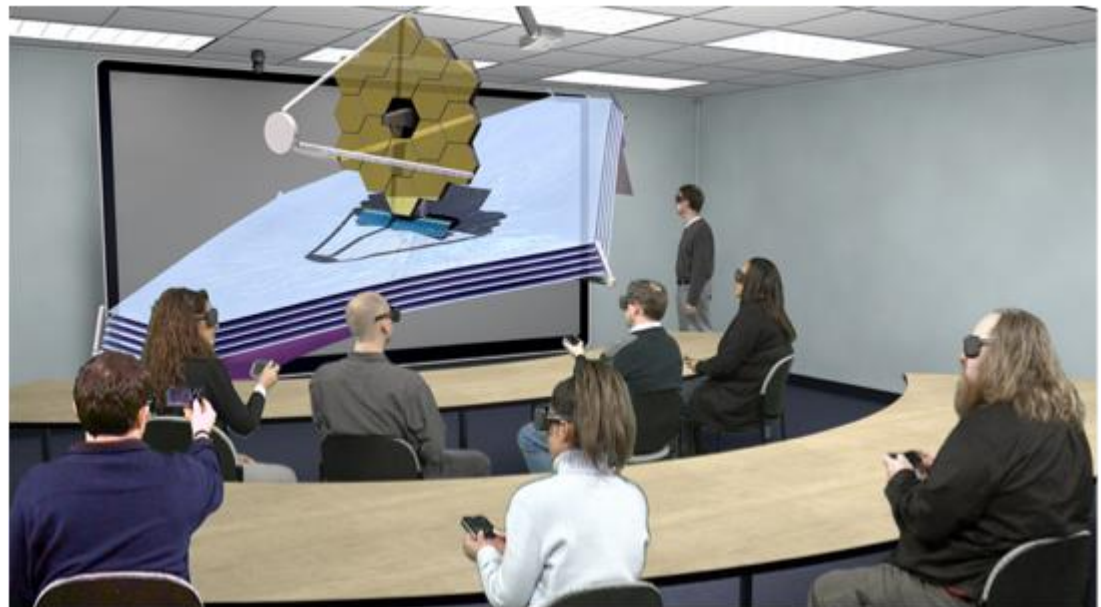


Multimedia, Virtual Reality, and 3D Technologies in the Classroom



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Technologies currently impacting classroom

- Cell phones & other digital devices
- Social media
- Software and apps to remix
- Wifi / Broadband networks
- Touch screens
- Data mining and archiving
- Various cloud based sites - Google docs, Adobe Creative Suite, etc .

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Technologies currently impacting classroom

- Wearable / POV cameras
- Ease of creating and redistributing content (not only is it easier for faculty to create and share content, but for students, too)
- Technology / Computer labs
- Digital content / online classes

2015 Digital Trends in Higher Ed

81%



of students use
mobile devices
to study

up 40% since 2013

77%



of students say
adaptive technology
has helped them
improve their
grades

62%



of students say
that technology
helps them feel
better prepared for
classes

48%



of students say that
technology helps
save them time

Emerging technologies in higher ed

- More machines
 - Robotics (Sphero, etc.)
 - Wearable technologies (“Smart watches, Google Glass, HoloLens, etc.)
 - 3D /Virtual Reality/Holograms
 - Drones
- STEM (Maker) Labs
- More open technologies and materials

Emerging technologies (sort of)

- More widespread use of 3D printers (although they are “old” technology)
- Ephemeral data (data not archived - or is it? Snapchat)
- Nanotechnology
- GIS/GPS
- Data collection



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Changing philosophies

- User & student expectations have changed
- Rise of DIY - Maker philosophy
- Creativity
- Share everything (to some)
- Metadata/Semantic meaning/Big Data
- Internet of Things
- “Privacy is dead” / Snowden
- Online identity
- Personal/local

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Opportunities

- design for all - universal design - goes beyond accessibility - enhances learning
- platform and carrier agnostic
- The tool should not drive the content
- STEAM (!)

Opportunities

- student centered
- personalized
- appropriate use of technology to support learning
- problemsolving
- “flipped” classrooms
- active learning
- collaboration
- creative
- Digital literacy

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Topics from the NMC Horizon Report > 2015 Higher Education Edition



CHALLENGES

SOLVABLE

- > Blending Formal and Informal Learning
- > Improving Digital Literacy

DIFFICULT

- > Personalizing Learning
- > Teaching Complex Thinking

WICKED

- > Competing Models of Education
- > Rewards for Teaching

TRENDS

SHORT-TERM

1-2 years in each direction

- > Increasing Use of Blended Learning
- > Redesigning Learning Spaces

MID-TERM

3-4 years in each direction

- > Growing Focus on Measuring Learning
- > Proliferation of Open Educational Resources

LONG-TERM

5+ years in each direction

- > Advancing Cultures of Change and Innovation
- > Increasing Cross-Institution Collaboration

2016

2017

2018

2019

2020

NEAR-TERM 1 year or less

- > Bring Your Own Device
- > Flipped Classroom

MID-TERM 2-3 years

- > Makerspaces
- > Wearable Technology

FAR-TERM 4-5 years

- > Adaptive Learning Technologies
- > The Internet of Things

TECHNOLOGIES

Multimedia

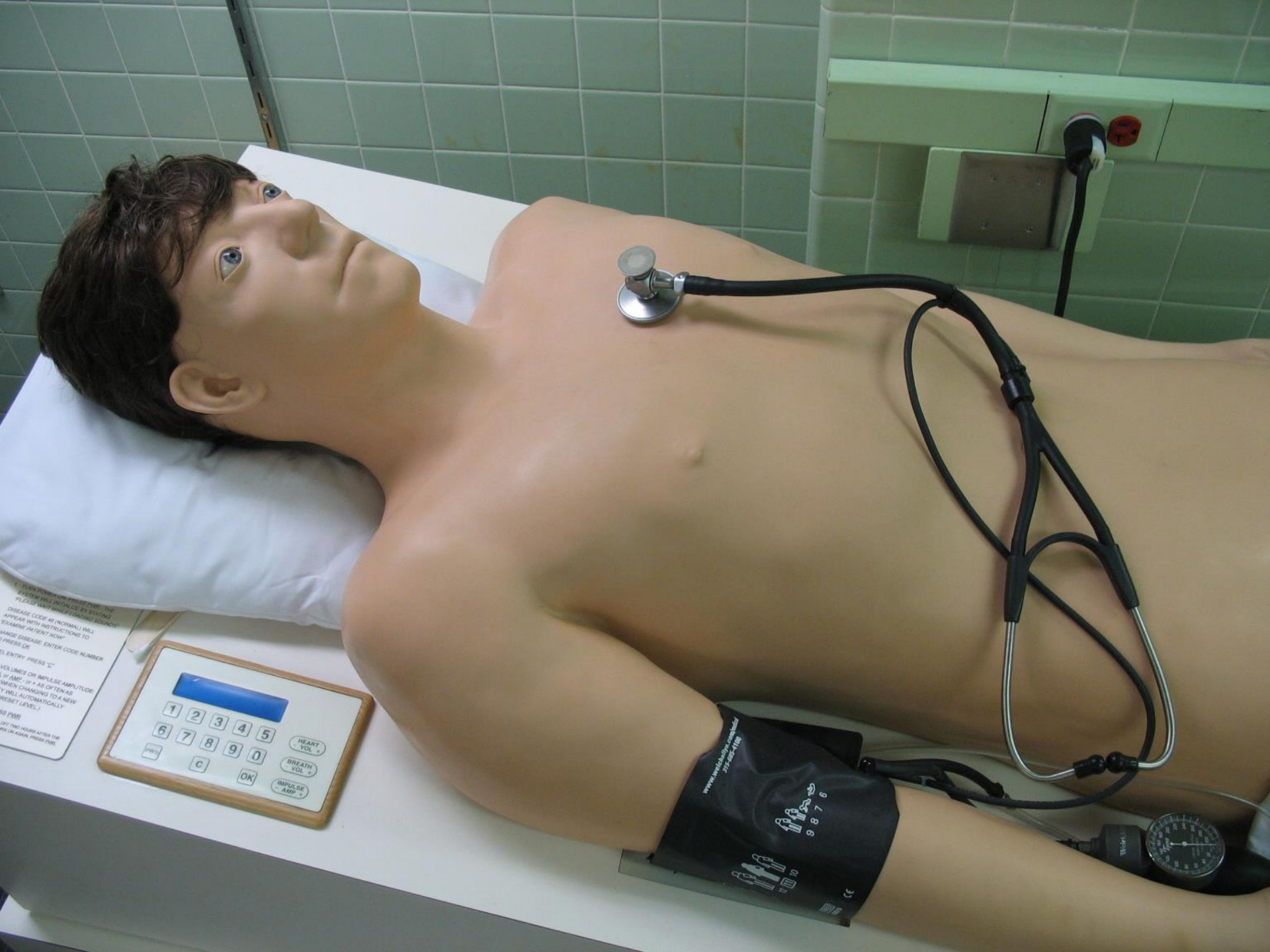
- Not only within software but also in tools - whiteboards, pens that record text as you write, “drawing” virtually
- Multimedia can be used to enhance learning and also address learning styles ; Simulations
- Examples: GoPros in the classroom, labs

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Tags

Chat



1. STAIN FROM THE PREVIOUS USE. THE SYSTEM WILL INITIALIZE IT'S STATUS TO "PLACED BUT NOT IN USE" DURING EACH USE. DISEASE CODE #1 (NORMAL) WILL APPEAR WITH INSTRUCTIONS TO "REMOVE PATIENT FROM" AND PRESS OK. CHANGE DISEASE. ENTER CODE NUMBER AND PRESS OK. 2. ENTRY: PRESS "C" VOL: LINES ON IMPULSE AMPLITUDE 1 OF 50% - 10% AS OF TEN AS WHEN CHANGING TO A NEW "Y" WILL AUTOMATICALLY RESET LEVELS. 3. 50 PPM OFF 700 HOURS AFTER THE END OF A 10 MIN. PULSE PPM

Control panel with a blue LCD display and a numeric keypad (0-9, C, OK). Buttons labeled: HEART VOL, BREATH VOL, IMPULSE AMP.

www.medic-alert.com
9876
CE

Multimedia

- Students can use
 - multimedia to build content demonstrating multiple competencies and literacies
 - practice real life tasks and skills
 - different types of content to address their learning needs
- Example: e-portfolios

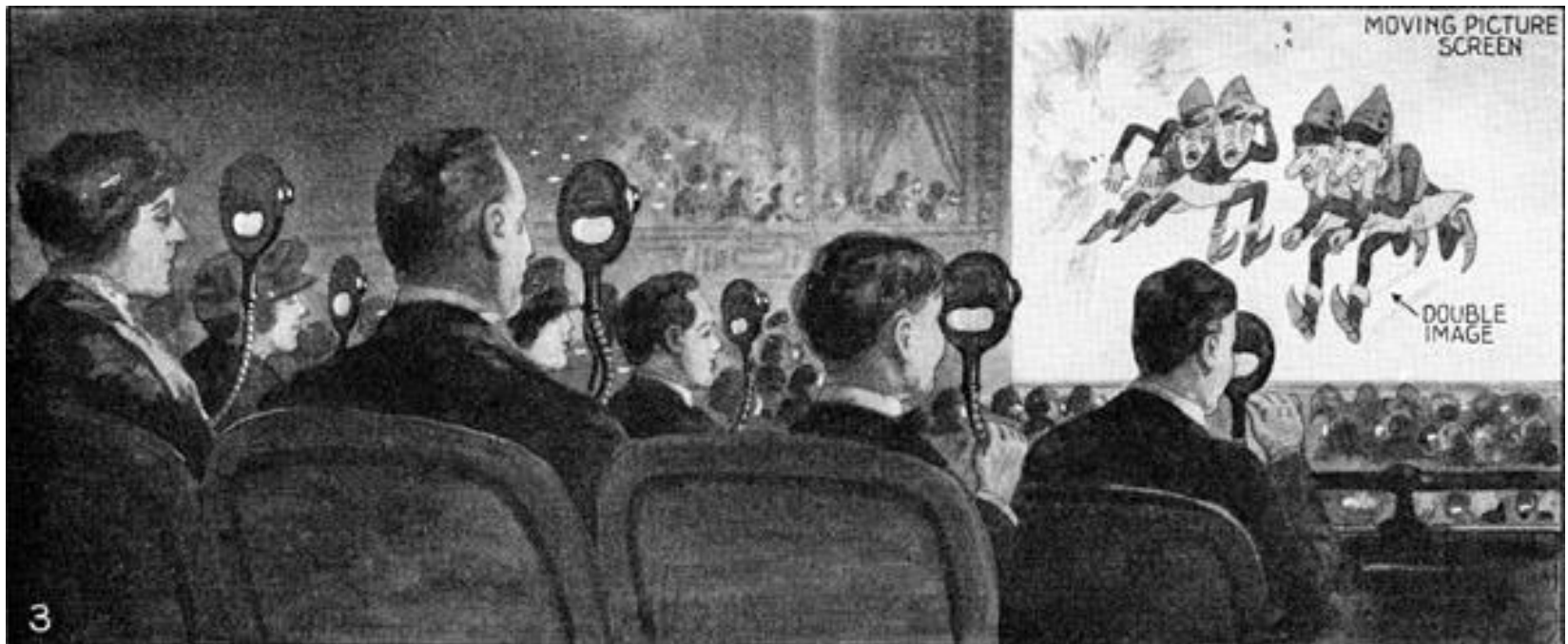
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3D printers, lasercutters - oh my!

- Technology is less expensive -
Home Depot sells a 3D printer
- Early patents expired, opening up the technology
- The rise of Makerspaces, Hackyards & DIY
- Encourages creativity and skills
- Can serve as a bridge between arts & science

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3D - it's not the creature from the black lagoon or the televue (1922)



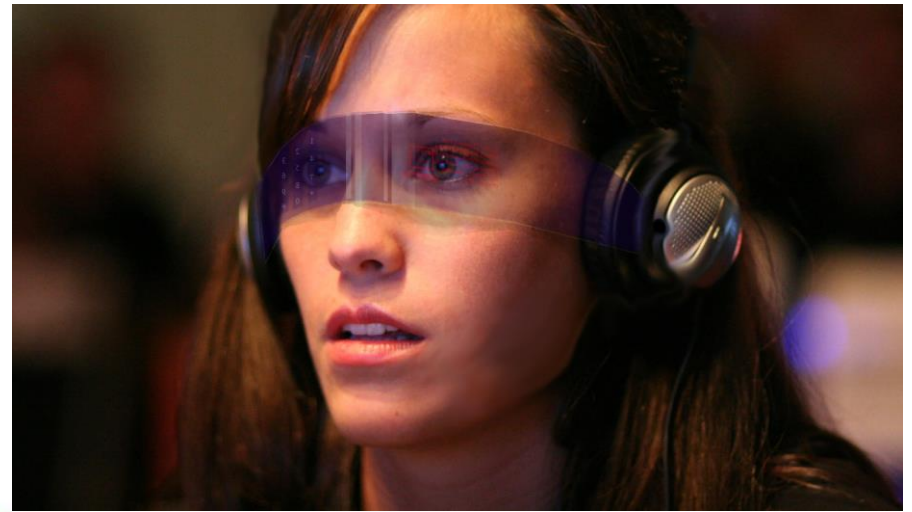
Passive 3D

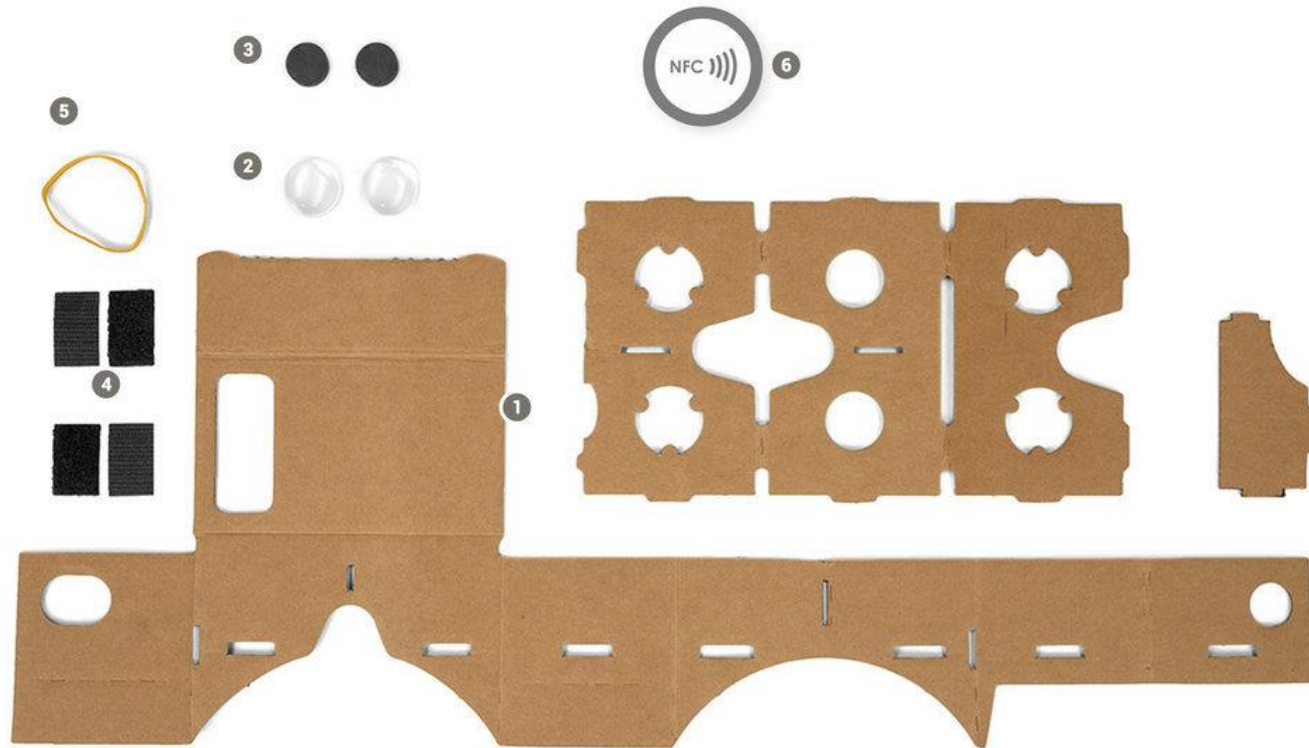
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3D - is involving ...



Active and interactive 3D
Still stereoscopic tho





1. Cardboard

2. Lenses

3. Magnets

4. Velcro

5. Rubber Band

6. NFC Tag (sold separately)

3D projectors have the ability to give students a way to visualize information and learn in a more dynamic way.

“There are neurons in our brains, a specific type of mirror neuron, which encode information according to the viewer’s perceived distance from an object. When objects are perceived to be within our “haptic envelope” that is, the immediate space around us where we feel we can reach out and touch any given object, these neurons are activated, thus engaging more of our neural pathways and resulting in a stronger memory.

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What does this mean for education? Well, if an object can be brought closer to a student their retention will increase. But this isn't always possible with a teacher up at the front of the classroom and students at their desks, right? And expensive touch-sensitive haptic technology devices are probably not affordable for most schools. Well, enter 3D technology. 3D images bring projected objects within each viewer's haptic envelope, resulting in each viewer having the same experience at the same time."

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Questions to ponder

How will we support all of these different types of devices?

How will we educate faculty about the software and devices?

How will we teach digital literacy and 21st century skills needed to succeed?

What about rights management and accessibility?

What about the digital divide?



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