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Using Interactive Digital Wall (iWall) Technology to Promote Active Learning

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Using Interactive Digital Wall (iWall) Technology to Promote Active Learning

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Paul Dye, Graphic Arts Visualization Specialist, iEXCEL
Presentation Outline

- Introduction to iWall Technology
- Using the iWall to Teach Information Mapping
- Instructor Assistance Needed
- Instructional Design Principles
- Questions and Audience Discussion
Paul Dye

- IEXCEL
- Graphic Arts Visualization Specialist
Introduction to the iWall

- Interactive, touch based video wall
- Software
- Features
Where is the iWall?
How Do I Get Started Using the iWall?

Key contacts – iWall Managers

Omaha
- Scheduling: Shaunna Briles | shaunna.briles@unmc.edu
- General questions: Paul Dye | paul.dye@unmc.edu

Scottsbluff
- Jerry Schledewitz | jschledewitz@unmc.edu

Kearney
- Alex Schultz | alex.schultz@unmc.edu
Cheryl Thompson

- College of Nursing
- Nurse Informaticist
Using the iWall to Teach Information Mapping

- Health informatics course
- Why used iWall
- Information mapping
- How iWall used
- What worked well
- What did not work so well
Introduction to Health Informatics

- Masters' of Science in Nursing
- Nurse Leader/Executive Advanced Development
- Distance
- Omaha, Lincoln, Kearney, 3 at home
Why Used iWall

• Build appreciation of nature of clinical information
  – Look at data differently

• Interaction with simulated clinical activity

• Visualize clinical information movement

• Use Information Mapping without teaching details

• Multiple resources on screen

• Student interaction across sites
Information Mapping

• Describe movement of patient sensitive data through typical information system

![Diagram showing the flow from Observation to Data to Computer]

• Evaluate flow of information in meeting patient, provider, administrator, and system needs

• Differentiate data/information input, storage, manipulation, and output
How iWall Used

• Maximize screen (39:15 – 39:24)
  – https://youtu.be/z0ZSrvciCJI

• Draw on video screen (40:40 – 40:50)
  – https://youtu.be/6afGz-WJGfY

• Real time instruction (1:10:18)

• Stop and start video (43:30 – 43:50)
  – https://youtu.be/IORIW3_3m7Q

• Change my direction (1:09:05 – 1:09:45)
  – https://youtu.be/_WBJQR4vhNw
iWall - Draw on video screen

https://youtu.be/6afGz-WJGfY
iWall – Stop/Start Video

https://youtu.be/IORIW3_3m7Q
iWall – Change of Direction

https://youtu.be/_WBJQR4vhNw
iWall – Real Time Instruction

- HR: 102
- Head Shape: Normal
- Patient
Successes

• Students in room with iWall
  – Active not passive
  – Allowed to make mistakes – correct in real time

• Visualization
  – Mixed simulation video with student interaction

• Could change on the fly

• Multiple images at once
  – Easy to move focus

• Reused other resources
  – Student simulation
Challenges for Class

• Camera restrictions
  – Camera in room mounted on iWall
  – Used laptop camera
  – Camera on laptop too close
  – Room too dark

• Audio
  – Monitor where I stood
  – Quality on tape

• Distance site students distracted

• Distance site interaction not yet “live”
Challenges for Instructor

• Explaining my goals

• Gathering resources
  – Finding video
  – Creating symbols ahead of time

• Learning technology
  – Practice and repeat
  – Second nature

• Matching technology to purpose
  – Trial and error
Student Comments

- Starting to think about how data drives decision-making (Anonymous Student)

- Not having ever thought about data movement Week 2 pushed me to look deeper into how data moves to help provide better care for patients (Anonymous Student)

- I keep thinking of one of the questions asked to us during the first two days of this class, was 'where does the data come from'? I never had stopped to think before about where does data come from? It doesn't just appear. (Jennifer Baumert)
Instructor Assistance Needed

- Topic Selection
- Hands-on Training
- Media Preparation
- Logistics
Learning Outcomes First

LEARNING OUTCOMES

TECHNOLOGY
Hands-on Training

Explore, Practice, and Test. Adapt if Needed.

Using a finger

Using a mouse
Hands-on Training

Intuitive interface. Two Examples.

Pin button, unpinned and pinned.

Context-Sensitive Menus
Media Preparation

Images, movies, documents, websites...
Logistics

iWall Exercise

Instructor Presence
Student Engagement
Instructional Design
Support
Instructional Design Principles

iWall Design – Usability

Consider users not directly interacting with the screen, offer additional value to them.

Keep different interaction zones in mind

Work-space, personal space considerations


Consider accessibility

When placing text, graphics, or media

Adjust font & media e.g. font size, color, type; location & size

Ensure readability
Audio considerations

iWall Uses – Learning Strategies

Absorption
- Internalization - e.g. embracing knowledge

Exploration
- Experimentation - e.g. attempting new experiences

Isolation
- Concentration - e.g. reading text

Collaboration
- Communication - e.g. interacting with others

Engagement  Scope
Effect  Awareness

iWall Uses – Experience

Engagement

Passive

• Low e.g. Watching others

Active

• High e.g. Touching the walls actions

Ian Stoodley, Elham Sayyad Abdi, Christine Bruce & Hilary Hughes (2018)

Image: Microscope: See the Multitaction Wall in Action – Screenshot from https://www.youtube.com/watch?v=EJLxEDqsbBo
iWall Uses – Experience

Scope

Close Focus
- Parts, e.g. looking at the detail

Panorama
- Wholes, e.g. standing back to see effect of actions

Ian Stoodley, Elham Sayyad Abdi, Christine Bruce & Hilary Hughes (2018)
Affect

Serious
• Intentional

Fun
• Incidental, relaxed
iWall Uses – Experience

Awareness

**Unaware**
- Learning is a by-product

**Aware**
- Intention to learn something
Other Ideas
Questions and Audience Discussion

• iWall to teach information mapping in 3 classrooms and 2 student homes (12 minutes)
  – Goals
  – How used
  – What worked well
  – What did not work so well
• Other ideas for teaching: All 4 of us (7 minutes)
• Questions and audience discussion (10 minutes)