

ONLINE EDUCATION
THROUGH GAMING
SYSTEMS: A PRACTICAL
INVESTIGATION



Who am I



Issues with Distance Education Today

- Technology enriched distance education can be frustrating
- Non-Similar systems
- Video Conf. Systems can be costly (Cisco)
- Pixilation
- Processing power
- Bandwidth issues
- Software limitations
- Visualization of faculty, students, classroom, etc...
- Video vs. Audio tradeoff
- Body Language
- Instructor immediacy

How can we address these issues?

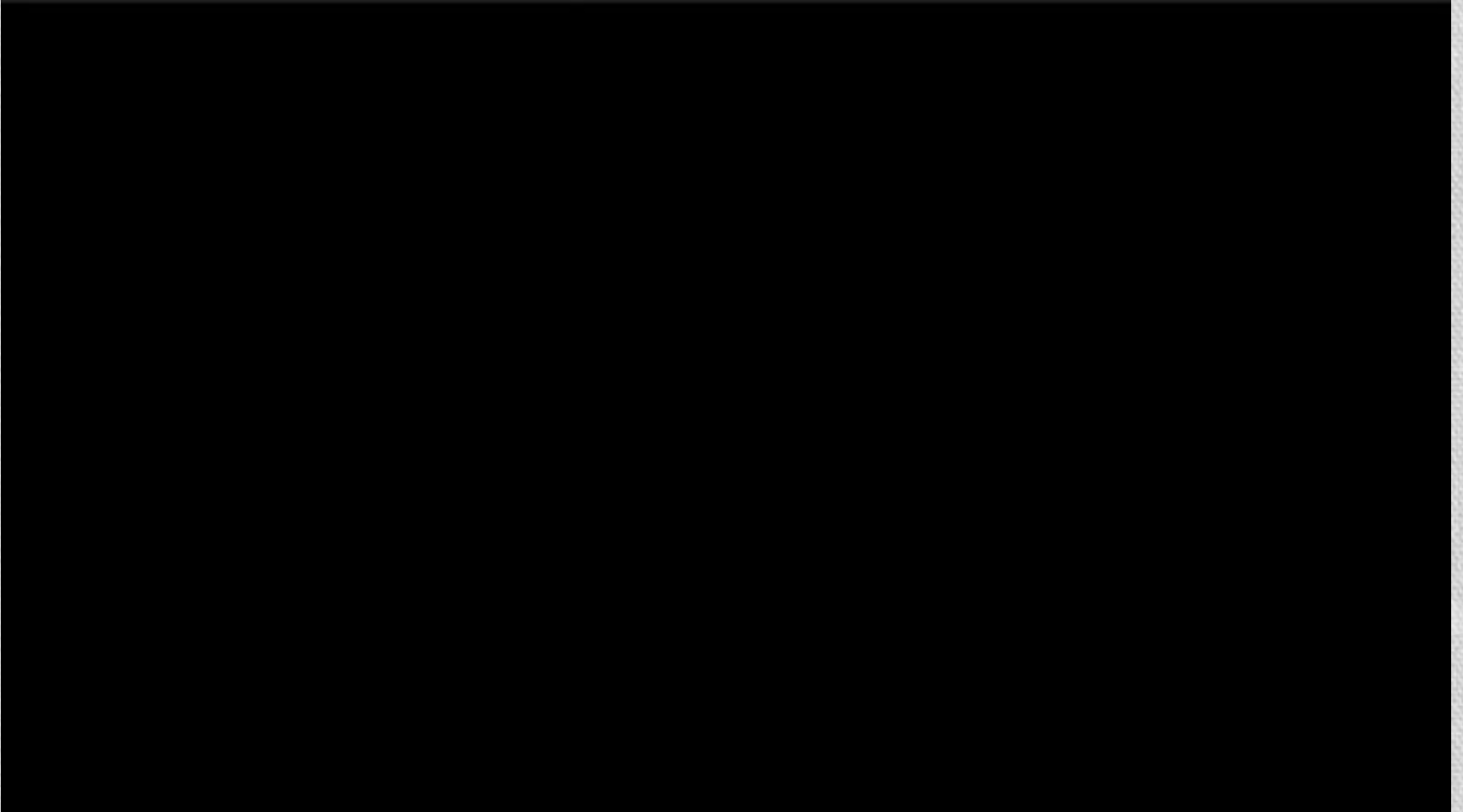
- Use a gaming system such as the Xbox & Kinect as the delivery method
- Why?
 - Can store data locally and only transfer small bits over connection
 - Built to handle graphics
 - Accessibility
 - Number of controller options
 - Xbox & Kinect Development Kit already exist
 - Xbox has Kinect chat rooms, etc...
 - Kinect SDK works on Windows, etc...

What I saw to start thinking about solutions

- Kinect
- Avatar Kinect
- Video Kinect
- uDraw



Avatar Kinect



Video Kinect



uDraw



Is this possible?

- Xbox system is #1 in US
- We virtualize the classroom environment through the Xbox 360 platform. (as one example)
- Robust Graphics
- Virtual Classroom environments can be pre-programmed
- Location of Data is local
- Multiple Cores locally on CPU & GPU- take advantage
- Bulk of data stored locally through DVD and/or download via Xbox Live

How?

- Faculty and students can create an avatar that reflects who they are by using the Kinect system.



How?

- For now – use prefab spaces from Kinect
- Future - Faculty can either pick from a list of prefab classroom designs (rows, round, etc...) or design their own environment.

STAGES



Magic Forest



Space



Whimsical



Sports Party



Rock Star



News



Entertainment



Cityscape



STAGES



Late Night



Gothic Punk Rock



Kaleidoscope



Kids



Spring



Summer



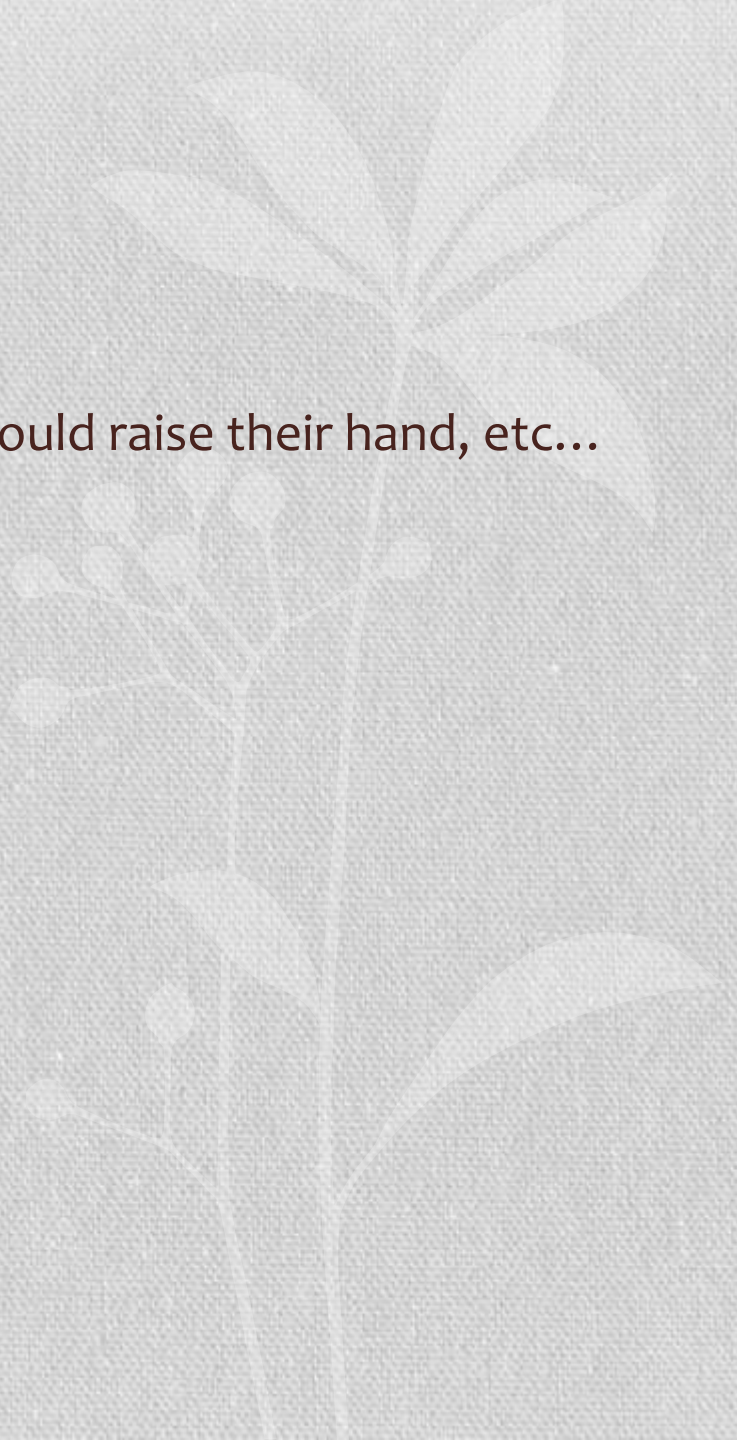
Fall



Winter

Virtualized Classroom

- Avatar Kinect --the beginning
- When a student raises their hand, the avatar would raise their hand, etc...



One-on-One?

- Video chat capabilities through the Microsoft Kinect system .
- Also, allows the faculty member to “spot check” students interaction with the class.
- Because of the local file location the only data passed through the Internet would be avatar location/movement and audio- keeping the quality much higher and somewhat akin to games like Halo or Call of Duty.

Student Reactions in discussions

- **Class presentation**

- Scenario: 25 year old male, working, family, near no major universities, and desire an MBA
- Schools could offer a digital distance education program
 - Solves geographic, monetary, and time constraints
 - Addresses many current distance education issues
 - Interpersonal, boredom, learning styles, immediate answers/feedback, presentation ability, proctored exams, and accountability

- **Games class discussion**

- Don't have Kinect
- Still too "Clunky"
- I'd rather come to class

- **Online class discussion**

- Use it for recordings
- Too "Clunky"
- Not going to buy for 1 class

Next Steps

- Should we do this?
- If so, how?
 - 1 to 2 years
 - Project Manager, Developers, Instructional Designer
 - “Different” classroom views.
 - Integrate with LMS
 - Students Need:
 - Xbox with Kinect (perhaps subsidized)
 - Internet Connection
 - Xbox Live account
- Is this too much work/cost for the benefit