What are we about?

- A two-semester experience for upper level undergraduates to learn about video game design and implementation.
- Third year doing this, first trying to build a learning game.
- Five faculty and about 20 students.
- Challenged ourselves to think about what it would mean to create a truly immersive world.
- Experience should support natural learning, and be backed up by theory about learning.
- Implemented an interactive demo version, proof of concept.
- Continue to learn a lot about teaching game design to undergraduates.

Ursula
Learning in Video Games

- Each game, or type of game, has its own literacy
- Different meanings in different semiotic domains (Gee)
- Have to read the game, probe its physics (Johnson)
- First step is learning how to learn

Chris
Teaching to Students’ Perceptual Strengths

- Dunn and Dunn Learning Styles Index (LSI)
- Perceptual Preferences
  - **Auditory** learners learn by listening (20-30% of secondary students)
  - **Visual** learners learn by reading, writing (40%)
  - **Tactual** learners learn by touching
  - **Kinesthetic** learners learn by doing
- How to reach “underachieving” students
Children learn language during sensory-motor period (Piaget)

James Asher’s Total Physical Response

TPR may aid in more complex forms of language processing (Lindstromberg and Boers)
Active Learning, but Kinesthetic Learning?

- What qualifies as physical action?
- What if your avatar performs the action?
- Typical game actions different from typical kinesthetic learning actions
- Starting to change with more natural, kinesthetic interfaces

Chris
The Wonders of the Wii

- Complicated buttons on controllers = barrier to entry
- Wii > barrier to entry

Teresa
The Affective Filter Hypothesis

- Prevents students from absorbing content in a language class
- Students’ attitudinal factors relate directly to their success:
  - Self-image
  - Image of target culture
  - General anxiety level in class
    (Dulay, Burt, Krashen and Terrell)
- Communicative classrooms encourage students to engage with language, and also each other
- Wii encourages similar social engagement
Kinesthetic Learning in a Game

- Develop an educational game that capitalizes on kinesthetic learning
- Learn Spanish by responding to input with appropriate gestures
- Enabled by Wii-mote input to a PC game engine
New Kind of Learning Game

Posed the challenge to students

Traditional, didactic solutions

How to move beyond?

Rule Set -

Battle System

Turn-based battle

Choose item in inventory or on battlefield

Choose action

Choose enemy to be attacked by your party member, however if the command doesn’t make sense, your party member will be confused and not do anything

Enemy goes

Player’s health = Confidence

Ways to lose confidence

Give party member command that doesn’t make sense

Get attacked by opponent

Your confidence = 0

Party member faints, you lose the game

Ursula and Teresa
Narrative Framework

- Story should facilitate learning goals;
- establish social context for learning;
- resonate with target audience
What's the Story?

- Navigate everyday life and solve a larger mystery
- Everyday commands and gestures
- Recorded by college conversation hour leaders
Building the Game: Engine

- Source provided useful assets and a familiar production pipeline
- but ultimately not intended for our type of game

Chris (and Jeff)
Building the Game: Gestures

- Three orthogonal ADXL 330 sense continuous acceleration
- Students defined set of 10 gestures for game, including:
  - hitting alarm clock
  - brushing teeth
  - handing in homework
  - erasing blackboard
  - swiping ID card
  - waving to friends

Teresa and Jeff
Game Demo
¿Adónde Vamos?

- Find (or build) more appropriate game engine
- Incorporate more gestures, more sophisticated gestures
- Incorporate other physical input
- Devise system for learning assessment
- Develop the larger mystery narrative
- Translate into more languages
Thanks

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