Teaching Virtual Reality Game Development

Robin Hunicke
Dennis Ramirez
Jichen Zhu
Ira Fay
Jesse Schell
Teaching Virtual Reality Game Development

Robin Hunicke
Associate Professor of Art, UC Santa Cruz
Co-founder, Funomena
VR & AR
Design Thinking
@UC Santa Cruz
Equipment is expensive and time consuming.

You are aiming for a moving target w/r/t performance...
Design constraints are always imposed best early, often

You miss 100% of the shots you don’t take!
Time
Time
Testing
Time Testing & Trying Again :D
Support
Support
Relationship
Community
Support
Relationship
Community
Space
Welcome to the demo for **visions**

press the play button to start the experience. This will be the only time you use the mouse.

- Use the keyboard to move around.

Affix the Oculus to your head, put on the headphones or connect your own headphones and enjoy!

Visions is a world
that isn’t all there. Utilizing some well-known perceptual phenomena, it questions how much of reality is made unreal through our perception of it. Is what you see real?
Teaching Virtual Reality Game Development

Dennis Ramirez
Technical Director, USC IMGD
@dennisramirez
USC School of Cinematic Arts
Interactive Media & Games Division
Get Students on Devices Quickly
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Get Students on Devices Quickly

Gets students to start “thinking in VR.”
Get Students on Devices Quickly

Avoids problems associated with editor only development.
Respect the players!
Respect the players!

The transition into VR is still jarring.
Respect the players!

You don’t want users throwing up in a playtest.
Set Up Teachable Moments
Set Up Teachable Moments
Set Up Teachable Moments

Productive Failure

- Have students attempt a challenge.
- Provide relevant info, answer questions.
- Have the students try again.
Tips For Teaching VR Game Dev

- Get students on devices quickly.
- Respect the players.
- Set up teachable moments.
Thank you!

Dennis Ramirez
@dennisramirez
Teaching Virtual Reality Game Development

Jichen Zhu
Associate Professor of Digital Media, Drexel University
Teaching
VR/AR
Game Dev
@Drexel
1. Academic Context
Academic Programs

× B.S. in
  × Game Design and Production
  × Animation and Visual Effects
  × Interactive Digital Media
  × Immersive Media (Minor)

× M.S. in Digital Media
× Ph.D. in Digital Media

Westphal College of Media Arts & Design
Student-Led Learning

- Drexel University Virtual Reality (DUVR) club
- Drexel SIGGRAPH Group
Facilities / Equipment
Facilities / Equipment

Animation Capture & Effects (ACE) Lab

360° camera system. Prof. Jushchyshyn
2. VR Game Dev
Gaming + Animation + Web / UX
M.S. thesis projects

Chester Cunanan, chesterc.net

Valentina Feldman, valfx.net
Senior Capstone Projects (DIGM & CS)

Knowledge We Seek
Polyscape Games
Student-led Projects
Student-Driven Projects

Aiden tries Superhero Flight VR

Brendan Luu
3. Challenges
I. Hardware / Space Accessibility
II. Designated Courses and Visible Structures
III. Getting Over the Hype
THANKS!

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Valentina Feldman, Troy Finamore, John Gall, Nick Jushchyshyn, Brendan Luu, All Drexel Digital Media faculty
Teaching Virtual Reality Game Development

Ira Fay
Assistant Professor of Computer Science and Game Design, Hampshire College
CEO, Fay Games
Hampshire College

- ~1300 undergrad
- More women than men
- No grades, no majors
- Top 10 in game design by Princeton Review

(but their methodology is questionable)
Undergraduate Courses

- 5-12 person teams
- 4-15 week projects
- Student pitched vs. Faculty directed

Playtesting in the Library Game Lab
Learning Goals

Students develop their skills in:
Learning Goals

Students develop their skills in:

- Teamwork
Learning Goals

Students develop their skills in:

- Teamwork
- Communication
Learning Goals

Students develop their skills in:

- Teamwork
- Communication
- Giving and receiving feedback
Learning Goals

Students develop their skills in:

- Teamwork
- Communication
- Giving and receiving feedback
- Resourcefulness
Learning Goals

Students develop their skills in:

- Teamwork
- Communication
- Giving and receiving feedback
- Resourcefulness
- Programming/Art/Audio/Design
Learning Goals

Students develop their skills in:

- Teamwork
- Communication
- Giving and receiving feedback
- Resourcefulness
- Programming/Art/Audio/Design
- Using industry standard tools
VR Challenges
VR Challenges

Game Design in an Unfamiliar Medium
VR Challenges

Game Design in an Unfamiliar Medium

Limited Hardware Availability
Design Challenges
Design Challenges

● Unfamiliar medium
Design Challenges

● Unfamiliar medium
  ● Leverage peer knowledge
Design Challenges

- Unfamiliar medium
  - Leverage peer knowledge
- Difficult to scope correctly
Limited Hardware
Yearly Non-Labor Expenses

$0 – $2500 = Easy
$2500 – $5000 = Medium
$5000+ = Hard
Limited Hardware
Limited Hardware

- Get students into the hardware fast
Limited Hardware

- Get students into the hardware fast
- Provide shared physical space (library!)
Limited Hardware

● Get students into the hardware fast
● Provide shared physical space (library!)
● Facilitate teamwork (e.g. lab times)
Limited Hardware

- Get students into the hardware fast
- Provide shared physical space (library!)
- Facilitate teamwork (e.g. lab times)
- Game designers travel to the device
Unfamiliar Medium
- Follow best practices
- Use peer knowledge
- Scope properly

Limited Hardware
- Establish pipeline
- Shared space
- Facilitate teamwork
- Designers travel
Thank you!

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VR will be really old technology for them
Teaching Virtual Reality Game Development

Jesse Schell
CEO, Schell Games
Distinguished Professor of Entertainment Technology, Carnegie Mellon University
Building Virtual Worlds

Jesse Schell
The Goal: Teamwork
The Platforms: Futuristic
The Timelines: Short

KEEP CALM
ONLY
2 WEEKS
LEFT
The TA’s: Numerous
The Feedback: Plentiful

Easy to Work With (longer bars are better)
The Motivation: Intense