How Penn State Lehigh Valley Leveraged 360˚ Video to Create Immersive Learning Modules and Open Educational Resources

Dr. Kenneth Thigpen | Dr. Karen Kackley | Kate Morgan | Eileen Grodziak
• Located in eastern PA
• One of 24 campuses in the PSU system
• A commuter campus
• One building
• Oldest campus in the PSU system outside of main campus (1912)
Sometimes it takes a village:

Ken Thigpen, Director of Academic Affairs
Kate Morgan, Director of Virtual Education
Karen Kackley, Assistant Teaching Professor of Biology
Eileen Grodziak, Instructional Designer
Anita Serrano, Lecturer in Spanish
Emerging Technology/Study Abroad

- Penn State Study Abroad Programs
- Global Programs
- Embedded Study Abroad
- Virtual "exchanges"
- Virtual reality/augmented reality/360 image capture
- Department of Virtual Education
- Metamorphose Project
- Field testing - eco-projects
- Puerto Rico
THINKING OUTSIDE THE CLASSROOM
Bringing the Tropics to Pennsylvania

Project documented in NABT 2012 Conference Poster Presentation
Challenges

Course Schedule
January - April

2 hour lab

Pennsylvania Winter

+ 

Price tag
Objective

Compare & Contrast Biomes

Temperate Forest  
Rain Forest  
Grassland

Photo credit: Nicholas A. Tonelli CC BY 2.0
“Even though I did not get to travel to Costa Rica, I gained from the experience of those who did. It made the course...much more engaging.”

—student response
Immersive Opportunity
"I feel as if I am a part of the environment around me, even though I physically am not there."
Unexpected Benefit of this Project

♫ How do you solve a problem like María? ♫
REIMAGINING THE STUDENT LEARNING EXPERIENCE
Ana Serrano, Instructor in Spanish I, II, III
Old San Juan
Old San Juan Fig Tree on the Water
Flattened 360° Video (underwater lenses)
Window to the Sea – The Vieques Conservations Historical Trust
Cementerio Santa María Magdalena de Pazzis, San Juan

One video
3 lessons

1. Spanish I – True or False
2. Spanish II – Terminology
3. Spanish III – Creative Writing Assignment
STORYBOARDING AND FILMING
A 360° VIDEO
Equipment
Viewing Equipment
How Do You Film in 360?

Sample
360° Storyboard
How Do You Film in 360˚?

• Avoid important content at seams
• Best focus is 4-8 feet
• Narrate without specific directions
Remember the Seams…
Editing and Uploading 360° Videos

Adobe Premiere
Editing and Uploading 360° Videos
Editing and Uploading 360° Videos

Created playlists

- Exploring Puerto Rico 360°
  Updated today

- Historic Bethlehem 360°
  Updated 5 days ago

- The Drew's Point of View 360°
ASSESSING THE PILOT

360° EXPERIENCE
Pilot Assessment

Number of students

- HISTORY
- SPANISH
- BIOLOGY
Students’ Prior Use of VR

n=70
## Students’ Prior Use of VR

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<th></th>
<th>VR</th>
<th>online</th>
<th>w/ headset</th>
<th>both</th>
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<td></td>
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<td>21</td>
<td>5</td>
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n=70
Students’ Prior Use of VR

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<td>Oculus Rift</td>
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<td>HTC vive</td>
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<td>Samsung VR</td>
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## Student’s Prior Use

### Number of Hours per week

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<td>49</td>
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<td>9</td>
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<td>1</td>
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<tr>
<td>More than 3</td>
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<td>1</td>
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Note: n=28 for VR and 360 video.
Witnessed others using VR – YouTube

Facebook

Eager to try
Student interest in using 360 video in college classes
Describe Experience

Feels like you are in the video
Interesting
Cool
Everything is around me without being there
Unbelievable point of view
It was insane, intense, real!
I didn’t even know that you could do that!
Open Responses

Ability to move around the screen
Choose where you want to look
Feel “in” what I was viewing
Being able to move and see what I choose
Moving with my phone to view
Would be even better with headset
Open Responses

Browser compatibility issue
Getting back to where I started
Quality (some connection issues)
Sound
Stationary camera
Too much information
Other Uses for 360° Video in Education

What ideas do you have for 360° Video?
How can 360 be used in college?

- Field trips
- View scientific specimens
- Astronomy
- Show us different biomes first hand
- Math
- Engineering - to see big cities
- Explore national parks
- Digital class projects
- Campus tours – Common hour activities
What assessment information would you be looking for?
THANK YOU