

Self-Study of a Project-Based Graduate Course Focused on Electronic Field Trip Development

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AGRICULTURAL
EDUCATION AND
COMMUNICATION

Presentation Overview



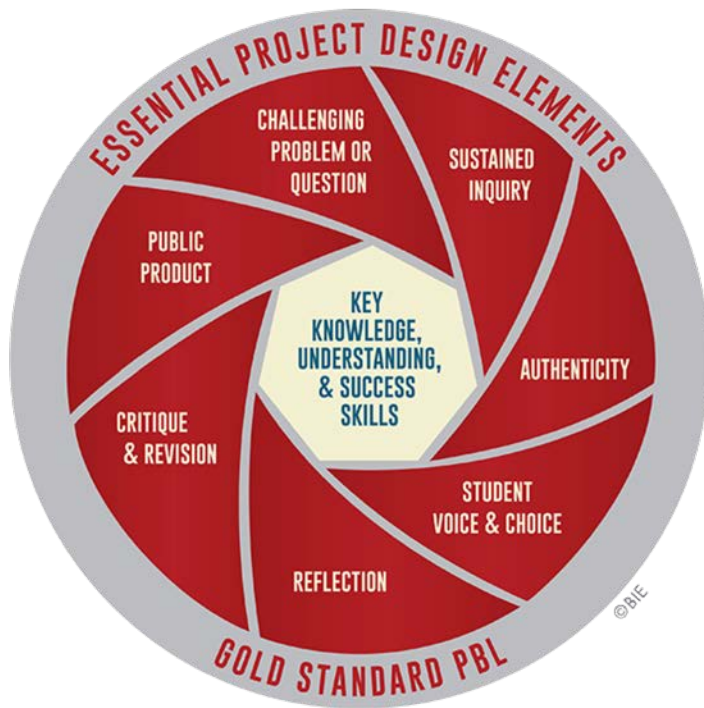
- Course context
 - Mobile electronic field trips (EFTs)
 - Questions & methods
 - Results
-

A woman with blonde hair, wearing a white shirt with black vertical stripes, is smiling and holding a small, brown, furry animal in her hands. She is standing in a storage room filled with shelves of boxes and various animal specimens, including skulls and skeletons. The room is well-lit, and the shelves are organized with labels. The woman is looking towards the camera, and her expression is friendly and engaged. The background shows a variety of animal specimens, including what appears to be a large skull on a high shelf and several smaller skulls and skeletons on lower shelves. The boxes are stacked neatly, and some have labels attached to them. The overall atmosphere is one of a professional and well-maintained museum or research facility.

Grad students (n = 8)
Scientists (n = 3)

AEC 5541:
Instructional and Communication
Technologies in Agriculture
and Natural Resources

Course design: Project-based learning



- Driving question
- Sustained inquiry
- Authenticity
- Student voice & choice
- Reflection
- Critique & revision
- Public product

Buck Institute for Education
<https://www.pblworks.org/>

Bats & Beyond: Electronic Field Trip



- UF bat houses
- Florida Museum collections
- Bahamas research
- Wildlife and climate empathy



Streaming Science EFTs

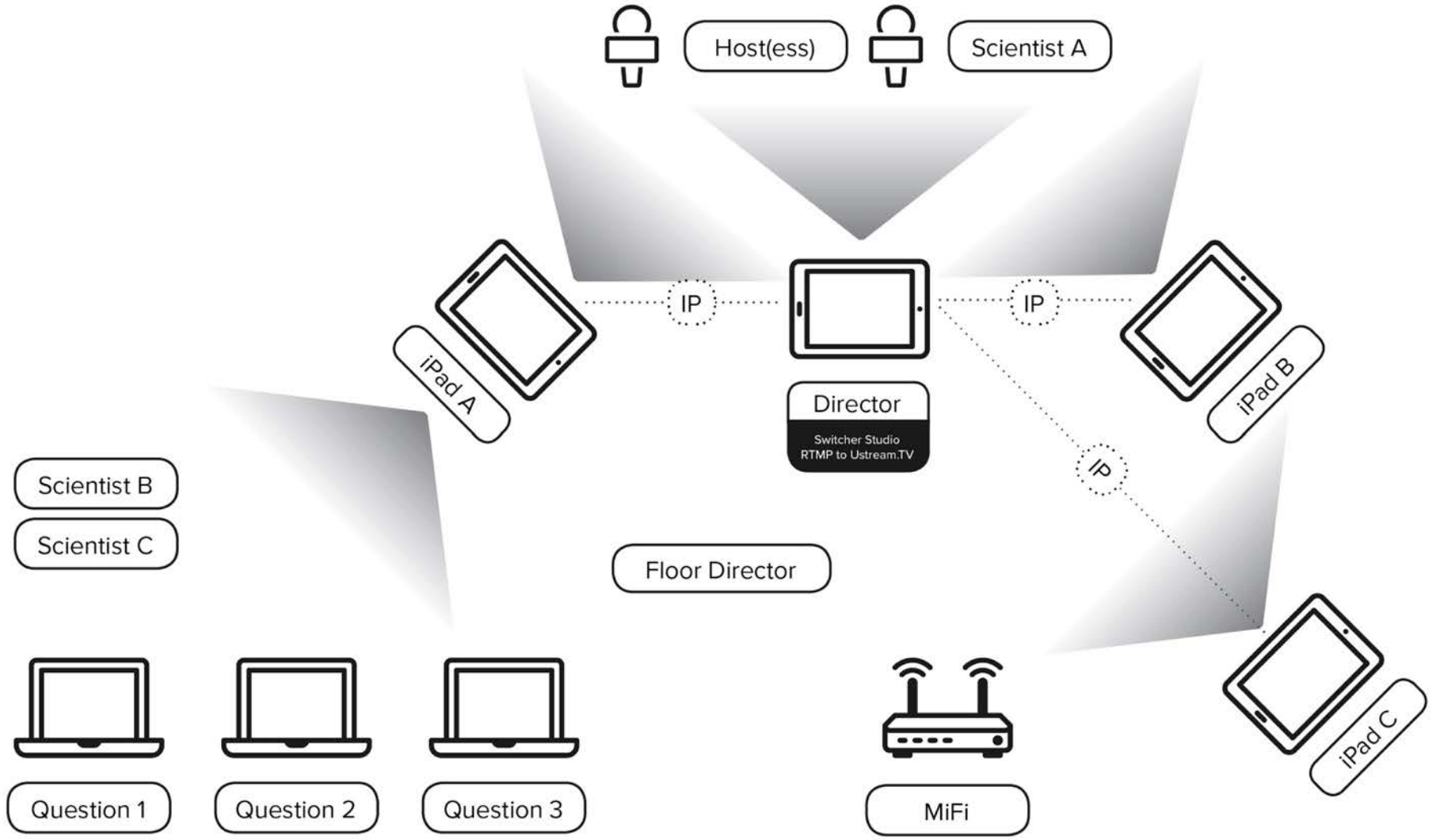


 iographer

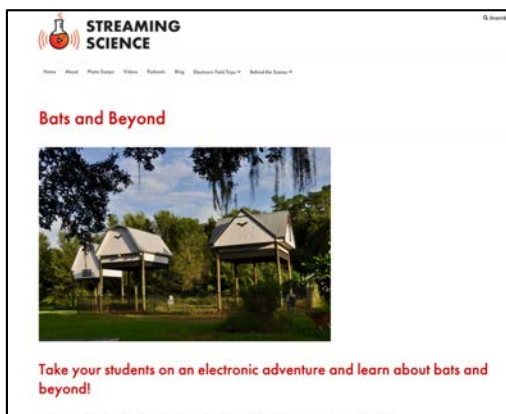
 Switcher Studio

USTREAM

an IBM Company



Streaming Science Format



Teacher's Guide
Wrap around suggestions

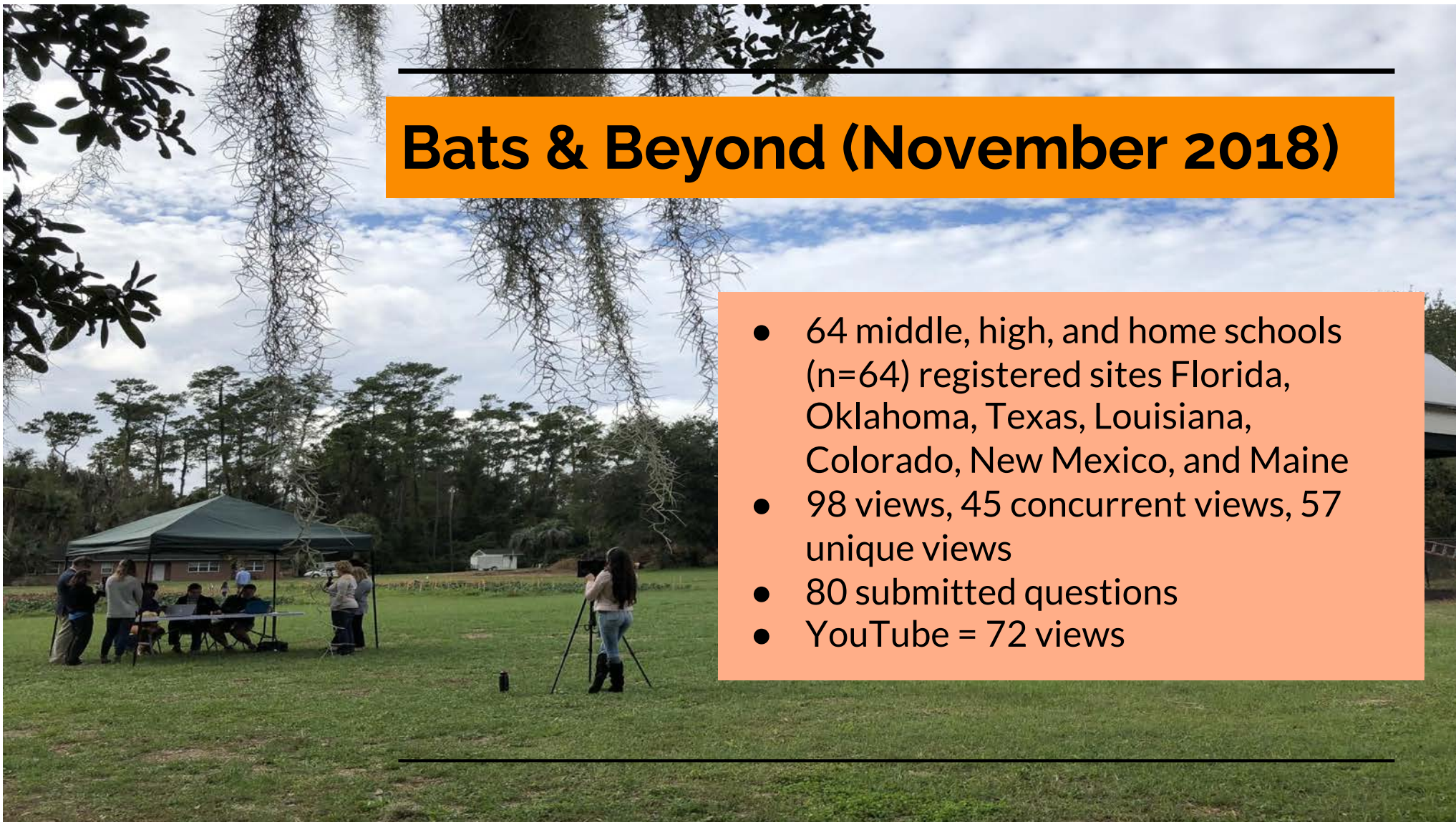
45 minutes
10am, 2pm, 4pm

- Segment 1
- Q&A
- Segment 2
- Q&A
- Segment 3
- Q&A



Bats & Beyond (November 2018)

- 64 middle, high, and home schools (n=64) registered sites Florida, Oklahoma, Texas, Louisiana, Colorado, New Mexico, and Maine
 - 98 views, 45 concurrent views, 57 unique views
 - 80 submitted questions
 - YouTube = 72 views
-



Research Questions	Data Sources	Methods
<p>What are graduate students' experiences participating in a PjBL-designed course focused on EFT production?</p>	<p>Course artifacts Co-constructed interviews Focus group</p>	<p>Open and axial coding Constant comparison Chunking - themes Member-checking</p>
<p>What are scientists' experiences participating in an EFT focused on their wildlife and climate change research?</p>	<p>Course artifacts Focus group</p>	<p>Open and axial coding Constant comparison Chunking - themes Member-checking</p>
<p>What recommendations do graduate students and scientists have for improving future iterations of the PjBL course and [program name] EFTs?</p>	<p>Course artifacts Co-constructed interviews Focus group</p>	<p>Open and axial coding Constant comparison Chunking - themes Member-checking</p>

The EFT project served as a context and vehicle to support graduate students' growth of science communication skills, EFT knowledge, and wildlife empathy. (RQ 1)

Steven: *There is so much that that we need to do in terms of communicating the right message and sharing knowledge with people, in order for them to understand it. Using technology is a great way to translate science-based information - putting it into the hands of viewers and listeners and the general public.*

Christine: *Specifically, I would really like to work at a museum or an aquarium one day, and I think that learning about these EFTs will directly help me get a job one day at a museum at an aquarium because I can say, 'Hey, this is something that I know how to do. I have done it before, and it will be a great income for the museum or aquarium – and it is also a great way to get the museum or aquarium's name out in the public.'*

Sydney: *I can confidently say that bats were not something that I was excited to learn about, once I had found out that we were doing an electronic field trip over them. I stereotypically thought they rabies and they could bite you and they were scary and not useful. After the electronic field trip, I saw all of those myths debunked and realized how important they are to our environment, how important they are to our climate, that they don't eat humans, don't bite humans, and I have a completely different perspective on bats.*

Scientists appreciated the EFT production process and online interactivity with PK-12 students about their research, yet the mobile technology has some constraints for engagement. (RQ 2)

Ashley: *What I really enjoyed seeing, personally, was that everyone rotated through all the stations and through all of the work. I know in a class like this it is kind of easy to like get backed into a corner where you are doing one thing - you're just the interviewer, or you're just the camera person. So, it was really great that it seemed like everybody had a similar experience, and they all got to do every aspect of the interview and the process.*

Matthew: *I've been in front of the camera quite a few times, but one thing that was really different this time, when we were doing the segments, I would easily forget which camera was focused on me. And so, only when the other cameras were really tight and it was obvious, did I know where to look. There are no little red lights on the cameras [iPads], so that...when anyone is really inexperienced, or even when you've been on a few times you know you are looking for 'okay, where am I supposed to be looking?' I would forget on this one.*

Amity: *I like seeing little kids. I can kind of like react more to what they are saying. So, having that disconnect was a little bit weird for me, at first, but I kind of got used to it - as we kind of went on with it, and just trying to remember that I am not talking to a college-aged person but I am talking to a 10-year-old or something like that was something that. I had to keep reminding myself because I couldn't see them in front of me.*

Student and scientists recommendations for more scaffolding within the PjBL design, improvement of EFT question segments, and to expand the experience beyond a one-semester course. (RQ 3)

Becca: ...even *if it is to check out the iPad through the week and play with what technology is on there. As someone who had no background whatsoever in this, I think that is probably my biggest take away. I think maybe not necessarily week one, but the second week – ‘okay, let’s get out the iPads and play with this a little bit, and let’s see what the imaging system looks like, let’s see how it is to move photos from this to this’ and that sort of thing.*”

Steven: *I would have liked to have more of an outline of the questions of what the hosts would ask the scientists. Maybe a little bit more in-depth than what we had, so that I could better prepare myself as the director to show - what order to show media in, that kind of stuff. I know we don’t ever really know what they are going to say, and that’s okay, but just have more of an idea going into it.*

Matthew: *It could be something as simple as a [follow-up] short class that is taught over spring break, where we’ve got six groups of researchers from the museum all working in the Bahamas at the same time on insects, anthropology, and bats - and you go to three or four of these sites in a week. You get a three or four-hour credit for that very intense class, but you can do that because you are already trained up on it.*

Next Steps



**STREAMING
SCIENCE**

- Analyze student/teacher data and publish results
- Examine Skype in the Classroom format
- Funding for EFT - citizen science communication - Skype year-long experience

Questions?

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