

# Reflection: Implementing the asynchronous aquatic ecology field trip guide

## Background

During March 2020, my graduate work was interrupted by the COVID-19 pandemic. Students nationwide were learning remotely, isolating in their homes and doing the best they could. At this time, I was taking a class called Diversity and Inclusion in the Classroom for the college teaching certificate program. For this class, I was working on a term project about safety practices in field experiences to mitigate identity-based risks (specifically for aquatic field experiences due to the added risk of water hazards). As quarantine began, I shifted my focus to how students could safely explore aquatic ecosystems on their own due to their field trips being canceled. I created a guide for designing asynchronous field trips so students studying online could have fundamental field experiences in a safe, inclusive way.

The guide for asynchronous field trips was published as an essay in *CourseSource* (Washko, 2021). Although the research was sound and the reviewers were satisfied, I wanted to test the design with a real class. During the fall 2022 semester, I was given the opportunity to be the instructor of record for Stream Ecology. This afforded me the opportunity to implement the design and obtain real student feedback on its effectiveness. The following is a reflection of my experience implementing my own guide and what changes might be beneficial for future students.

## Implementation

I followed the steps outlined in Washko, 2021, and used the supplementary example communication files when assigning the activity to my class. According to the pre-survey (filled out by 17/17 students), the students were comfortable and prepared to complete the activity. One difference I made was not hosting a live Q&A session via zoom, because the class was in-person and we made time at the beginning of multiple classes for clarification questions. Students were additionally emailed instructions, potential field trip site locations, and the worksheet, and they had access to all of these materials in a folder on our course website. Students were assigned to groups of three or four students to check in with, as per the guide, and were given two weeks to complete the assignment.

One edit I made to the assignment from the original version was that I did not make the instructional podcast for students to listen to in the field as they completed the assignment. I omitted this step because I did not have much time to prepare and record the podcast. In the future, I would definitely incorporate this because I feel strongly about multimodality in instruction. Further, in an online class, students are more separated from the instructor, so

having the option to hear me guide them through the activity could increase a sense of mentorship and care on the part of the instructor. There are bits of information that I could have incorporated into the podcast that would have been out of place to write into the instructions or to provide extra clarity.

Another difference in implementation was adding more structure to the group component. In addition to using the groups as a check-in network for students and a peer group for talking about their experiences, I added a venn diagram activity. Students had to meet (virtually or in-person) with their groups and create a venn diagram of similarities and differences between the ponds they visited and observed. Though this was a Stream Ecology class, I still had the students visit ponds to provide them with a wetland experience, and wetland ecology ties to the Santa Cruz River field unit we did a month later (specifically the vegetation component). The students completed the assignment and 14/17 students filled out the post-survey.

## Results

### Pre Survey

According to the pre-survey, students were comfortable and prepared to tackle this project. In the pre-survey, 88% of students had access to a car. This means they were able to visit many potential sites. I think this percentage would be similar in an online class because students living at home might have access to a family vehicle (or personal vehicle), but lower if the majority of students lived on campus, such as first- or second-year students (parking on campus is extremely expensive). The students were a fairly outdoorsy group to begin with; 70% said they spend 3+ hours outdoors per week, and 35% spend 8+ hours outdoors per week. This may often be the case in a higher-level, field-based class like Stream Ecology, making field activities easier. However, instructors should not overlook the minority of students that might be less familiar with spending extended periods of time outdoors.

Students responded that their level of comfort was high for exploring campus and city parks, demonstrating the importance of emphasizing these areas for visitation in the activity instructions. One-hundred percent of students responded that they felt comfortable exploring a pond on campus alone, and 88% said they felt comfortable exploring a city park alone. Though not all students were willing to venture off campus alone, 100% said they would feel safe exploring a city park with a friend or family member, which is explicitly allowed and encouraged in the instructions.

With this design, not only are students feeling safe, but they don't have to expend a lot of resources to make this happen. One-hundred percent of students said they had access to the materials needed (sun protection, water bottle, notebook, smartphone, outside shoes) for the activity. I also offered items (sunscreen, water, outdoor shoes, backpack) for students to borrow if they needed anything to make the activity easier, but no students asked.

### Completion

All students completed the project on time and seemed to have no trouble with the activity. After spending a few minutes at the beginning of two classes discussing the project,

students did not have questions and did the work. This was implemented in an upper-level class, so more inexperienced students may need more coaching. Further, in a larger class, students may be more likely to have a lapse in attention and require repetition of the instructions, so instructors might need to facilitate the Q&A discussion and send more reminders. During the activity completion window (two weeks), no one contacted me that they were having trouble completing the field trip or did not feel safe.

After the due date, I gave points for each worksheet question and for turning in the group project– not for correctness or depth of observation, just for completion. In the online gradebook, I gave students feedback on their observations. I told them which observations I thought were especially insightful and left questions about observations that I thought did not make sense. Students were thorough in their answers and uploaded numerous photos to show me their site.

### Post-Survey

As mentioned above, 14/17 students completed the post-survey, and responses were overwhelmingly positive. One-hundred percent of students said they felt comfortable at their pond alone, and all students said they would recommend their pond to future students. In fact, some students described their pond site as ‘urban oasis’ or ‘another world,’ and many described organisms or the ecosystem as ‘cool’, ‘awesome’, and ‘vibrant.’

One student wished they had chosen a pond closer to their home to save time driving. According to the spreadsheet where students entered their site coordinates, 14/17 students visited a pond within a 15-minute drive of campus or on campus. Only two students drove about 30 minutes from campus, and one student drove to a pond approximately two hours away.

When asked about items students would recommend future students bring on their asynchronous field trip, all the items listed were on the packing list in the instructions. These included comfy shoes, water, sun protection, and a notebook and pencil. A couple students mentioned that they brought laptops to fill out the worksheet digitally.

Group work is notoriously aggravating for students (Allan, 2016; Popov et al., 2012), but 85% (12/14) said the group work system worked for them. Considering there are always group members who are difficult to work with or difficult to contact, a rate of 85% satisfaction seems successful. The group project was designed such that everyone had to participate and contribute equally, which may have contributed to the strong positive response.

One question on the post-survey was about challenging aspects of the field trip. Students said they did not find the field trip difficult, which is great news moving forward because this should be a positive experience, not a demoralizing one. A couple students mentioned that group work can be challenging, and one student reiterated that they wished they hadn’t chosen a pond so far away, but most entered N/A or wrote that nothing was difficult.

When asked which part of the field trip they enjoyed, students said they enjoyed intentionally making observations. They liked that there was a specific amount of time they had to spend observing– it forced them to really focus and see new things. Students responded that they normally would not take the time to observe or to visit these places, and that they enjoyed seeing a new place and spending time in nature. In the optional ‘other comments’ section, many students reiterated that they found the activity enjoyable and relaxing.

## Conclusions

Overall, students truly appreciated this activity. I designed it to get them started on making observations and thinking about aquatic ecosystems, which they enjoyed doing. One important result from implementing this activity is that campus-based ponds and urban ponds or ponds in highly-developed areas are important for inclusivity and accessibility. The majority of students stayed close to campus, which could indicate they have limited time, which would probably also be true for online students. For example, 70% of Arizona Online students are enrolled part-time. According to the literature, many online-only students study part time because they are employed (Johnson, 2015). These students could also be trying out college, deciding if it's something they want to pursue and commit to. Full-time online students are more anxious about classes than part-time students (Abdous, 2019), therefore designing this activity in a low-stress way is very important. Luckily, students enjoyed this activity and seemed to use it as an escape, with the benefit that they were actually doing homework. Further, students are more likely to complete an online course if it "provides experiences that add to students' current academic backgrounds" (Zhang et al., 2019). An observational field trip could be a point of stimulation to help students feel invested and involved in the discipline, improving completion and retention.

## References

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