

Supplemental Material

CBE—Life Sciences Education

Wood and Sawtelle

Appendix A

Spring 2019 after Research Methods Course at River College

This first interview conducted with Nicole focused on eliciting self-efficacy experiences and used the LifeGrid format (Rowland et al., 2019).

a. Interview protocol

- Talk about how your group decided to make changes to your initial idea for your project, and also how you felt about changing from your initial interests.
- Can you walk me through how your project evolved over time?
- Just because I didn't get to interact with any of you over your spring break, could you tell me if you did any work on your project over spring break?
- Looking back at the details of each week, is there anything you're surprised by or would do, answer, or describe differently now?
- Can you tell me about previous experiences you have with doing science experiments and how they prepared you or didn't prepare you to complete this project?
- Discuss how you feel now, at the end of your project, about the goal you set for yourself in the first week of journaling. How do you feel about your success accomplishing the goal? How did this goal change throughout the semester?
- How did your overarching goals for what you wanted to take away from this project experience change over the course of doing the project?
- Both now, having finished the project and looking back on the whole experience, as well as thinking about smaller achievements throughout the process, how do you feel you did in achieving your goals?
- Discuss your collaboration each week with other people in the course and your contribution to the project each week.
- Could you describe how you remember feeling each week in terms of your confidence in your progress on your project?

b. Summary of Journal Prompts

The journal prompts to solicit reflections were distributed each week as part of the course activities. These prompts were designed to elicit statements related to academic and scientific self-efficacy experiences. Examples of some of the journal prompts include:

- What did you work on for your project in this past week?
- What were your project goals, and how satisfied do you feel with your progress on these goals? What are your goals for next week, and how confident do you feel about your ability to complete those goals?
- What did you learn this week that helped you move forward in your project?
- Describe an experience from working on your project this week that stands out to you as memorable.
- Discuss any interactions you had with your instructors this week. What went well and what could be improved?

c. Spring 2019 Interview Excerpts

1. Excerpt 1

INTERVIEWER: How was the process of finding a group? Because I feel that one week nobody had groups and then the next week everybody had their groups and their projects. So, how did that happen?

RESPONDENT: Yes. I just remember standing in the hall. I heard [Collette] and I think it was [another student]. We're talking and it sounded like [Collette] also wanted to work with animals so I just asked her if she had a partner yet. I think, at the time, she was thinking about working with [other student] as well. But I asked to join the group and that's kind of how it started.

INTERVIEWER: Cool. Yes, I was wondering too how they all kind of just ended up being partner groups. Were you originally thinking of being a group of more than two people and then it just fell through working with [other student] as well?

RESPONDENT: Originally, I didn't really care how many people were in the group.

INTERVIEWER: So, it just ended up that everyone was in their groups?

RESPONDENT: Yes, and [other student] ended up working with some other group in the end.

INTERVIEWER: You just kind of overheard her and were like, "Hey, I don't have a partner"?

RESPONDENT: Yes, (chuckles) pretty much.

INTERVIEWER: Cool. And then the next week you said that you had joined a group that was interested in that. At that point, you guys were just like, "We want to look at water quality and fish"?

RESPONDENT: Yes.

INTERVIEWER: That was the level of specificity. That probably covers that whole week then. ...Do you remember anything else big that went on in the week where you decided what you wanted to do? It looks like the next week you were discussing ideas. You wanted to look at heavy metals in water and fish. And that changed, right?

RESPONDENT: Yes. For the first couple of weeks of the experiment, actually, we kept talking to all of the professors. None of them even knew if we could do this project. So, we were really worried.

INTERVIEWER: Yes, I was noticing that because there was one week where [professor] had said that you would be able to do it. And then the next week you were talking to [another professor] again and he was still unclear if you would be able to do it or not. So, it sounds like the professors all had different communication with you and different ideas of things to say.

RESPONDENT: Yes.

INTERVIEWER: Did you feel it was not organized or did you feel that that added to your stress some? Or was it useful having all of the different professors able to help in different ways?

RESPONDENT: It was useful for them to help in different ways, but at the same time it did add to the stress. And then not knowing 100 percent if we would be able to do it. A very confusing time as well (chuckles) trying to figure out a different experiment that we could do just as a backup if we weren't able to.

INTERVIEWER: I feel like you guys had a pretty good backup plan all along, though, right? [0:06:19]

RESPONDENT: I think so, yes.

2. Excerpt 2

INTERVIEWER: I also felt like some of the groups worked more specifically with one instructor or the other based on the expertise of the instructor. Do you guys feel like you worked specifically with someone over someone else? I forget what expertise each one has. Were you working with someone specifically more?

RESPONDENT: I would say probably in between [first professor] and [second professor] just because we were looking at the more animal biology and some chemistry...

INTERVIEWER: Right. That's what it is. Thank you. I was like, "I can't remember what they all do." Did you know the instructors before this class?

RESPONDENT: I knew [first professor]. I had him in my very first biology class in my first year here. He probably doesn't remember me (chuckles). So, I had him and then I think that was a semester before I had [second professor] for my chemistry lab. At the time, I was taking Organic-1, which he was also my professor for that as well. I had never actually met [third professor] before that class.

INTERVIEWER: I feel like I've talked to some other people in the interview, and they found it really helpful that they were already comfortable with the instructors. Did you feel like that was helpful? That it was like, "These are people that I know"?

RESPONDENT: Yes, it did. It was very helpful to also get to know [third professor] even more because that was my first time meeting him and I had him for that class, and another class at the same time. Now I have him again.

Table 1A.

Overview of emotion statements in Nicole's journals from River College Scholars methods course

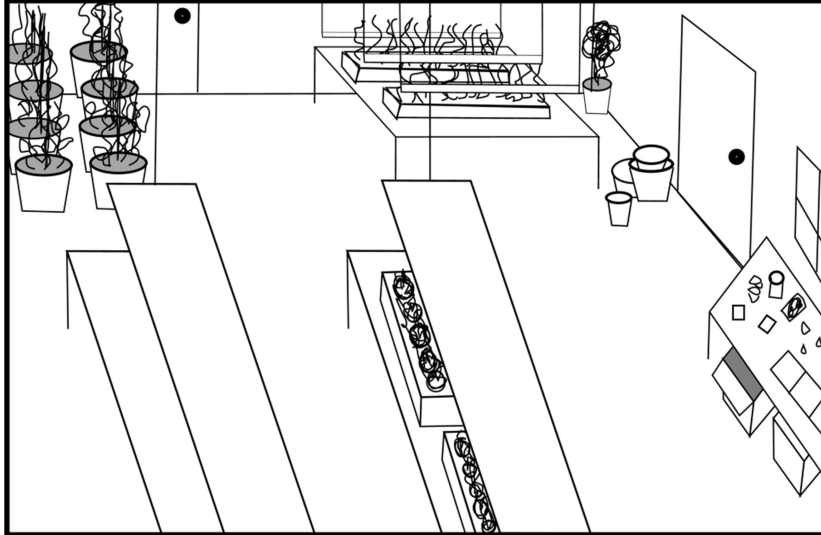
Week # of journals	Emotions described
Week 1	<i>None</i>
Week 2	<i>Passionate:</i> "the reason being that we both seem very passionate about working with animals."
Week 3	<i>Proud, worried, encouraged:</i> "While we are just starting on finalizing our project idea, I'm proud of the fact that we know specifically what we want to do our project on and that we have a back-up idea in case we are unable to do what we initially wanted to do." "I am a little worried about getting the project done on time." "They then went on saying that even if we do not find a heavy metal that we are looking for, then that is still a result. It was encouraging to me to hear that last part as it is easy to forget that."
Week 4	<i>Proud, frustrated, satisfied:</i> "I am proud of the fact that we have finally made a decision on what we wanted to do for our research project." "However, I am beginning to be a little frustrated by the fact that we have yet to actually start the project, so I kind of feel a little 'behind schedule.'" "I feel a little satisfied with the progress we have made, but I wish we could have done more."

Week 5	<p><i>Proud, frustrated, worried:</i></p> <p>“I’m proud of the fact that [Collette] and I have finally found something we really want to do and that at this point we are just waiting for materials.”</p> <p>“However, I am very frustrated by the fact that we may not be able to work on this research idea.”</p> <p>“He had told me that he was unsure if we would be able to do research involving animals, which is really worrying me.”</p>
Week 6	<p><i>Happy, frustrated, satisfied, afraid:</i></p> <p>“I’m happy that we bought all of the materials that we need.”</p> <p>“However, I am very frustrated by the fact that we didn’t have enough time to find a place to get the river water.”</p> <p>“Unfortunately, during our drive with [professor], we were unable to find a good place to collect the water, so I only feel a little satisfied with our progress.”</p> <p>“We are unsure if we should just feed them earthworms, something that they might eat in nature, or if we should give them carnivore pellets, which we are afraid might make the fish more aggressive.”</p>
Week 7	<p><i>Proud, frustrated, satisfied, excited (x2):</i></p> <p>“I am very proud that we have completely prepared both tanks for the fish and already have the fish in the tanks.”</p> <p>“I would normally be frustrated about the feeling of being very behind in our project, however, the professors talked about us being able to continue our research into the next semester. Therefore, at the moment, I do not feel that frustrated about anything.”</p> <p>“I feel very satisfied with the progress we have made in our research project.”</p> <p>“Additionally, all of the instructors talked about how we may be able to continue our research project into the next semester, which is very exciting to me.”</p> <p>“I feel very good about my contribution and I am very excited to learn more about how to take care of fish and how to measure them.”</p>
Week 8	<p><i>Proud, frustrated, pleased, afraid:</i></p> <p>“I am very proud that we have started collecting data on the fish.”</p> <p>“However, I am frustrated by the fact that we seem to be losing fish quite frequently.”</p> <p>“I am very pleased that we are on our second day of collecting data on how the fish are progressing.”</p> <p>“I feel good about what I have been contributing, however, I wish that I could help out more with the fish but I am too afraid of hurting them.”</p>
Week 9	<p><i>Proud, frustrated, afraid, satisfied, feeling good:</i></p> <p>“I am proud that we have finished collecting the data that we need.”</p> <p>“However, I’m a little frustrated that we haven’t really had time to work on the poster.”</p> <p>“and I’m afraid of not getting it done on time.”</p> <p>“I feel somewhat satisfied with the progress we have made.”</p> <p>“I feel pretty good about my contribution.”</p>
Week 10	<p><i>Proud, frustrated, proud, satisfied:</i></p> <p>“I am very proud that we have officially completed the experiment and created a decent poster.”</p> <p>“However, I still feel a little frustrated that my partner and I never really had a lot of time to work on it more outside of class.”</p> <p>“I am most proud of the fact that not all of our fish died, as we thought they might have by now.”</p> <p>“I feel pretty satisfied with how we did as I think our poster is decently good.”</p>

Drawings of settings adapted from the observational fieldnotes

Figure Appendix 1.

River College Greenhouse



The greenhouse was an option for students to use as a research site, and early in the course, the professors walked students around the building and campus to show them some of their options. These drawings are adapted by Wood from Wood's observational fieldnotes.

Appendix B

Fall 2019 (First semester at Lake University)

The following interviews at Lake University again focused on eliciting self-efficacy and self-efficacy experiences. These interview prompts were largely drawn from published work probing self-efficacy experiences in interviews.

a. Interview Protocol

- Can you tell me a little about yourself?
 - What are you studying in college?
 - Where did you start your college path?
- Did you “graduate” from the community college?
 - In your experience are there differences for students if there is intent on transferring vs. staying at [River College] for a specific program?
 - [If yes], so when you finish [at Lake University] will you have graduated twice?
- Do you have ideas about what you might want to do after college?
- What classes have you been taking this semester?
- What’s your major [at Lake University]?
 - Tell me one memorable story that would help me understand how you came to be pursuing your major. (modified from Zeldin & Pajares, 2000)
 - What do people you know (family/teachers/peers) say to you about your decision to pursue this major plan? (modified from Zeldin & Pajares, 2000)
 - Have you gotten any messages from society about your choice? (modified from Zeldin & Pajares, 2000)
- Looking back at your academic career, is there anything you would do differently if you had the chance? (modified from Zeldin & Pajares, 2000)
- I’m really interested in how students view success in classes. Can you tell me about your thoughts? How do you define success in your science classes? What do you need to do to consider yourself successful? (modified from Hutchison et al., 2006)
 - Anything else?
 - If you had to rank these things, which is most important?
- I’m also interested in how successful you think you will be as a science student. To what degree do you think you will be successful in your science classes? (modified from Hutchison et al., 2006)
 - On what experiences are you basing your judgement
 - How have other people influenced how you think you will do?
 - How have people (family/teachers/peers) encouraged/discouraged you to succeed?
- Tell me about a time you felt really confident about your performance in a particular science class. It could be a class you’re taking now or one you’ve taken in the past. (modified from Hutchison et al., 2006)
 - What about that experience made you feel confident?
- Finish this statement: When I’m looking back at my college days, I’ll think I was successful if _____ (modified from Hutchison et al., 2006)
 - How do you believe your peers would finish this statement?
- Tell me a little bit about your experience of transferring to [Lake University]. What went well? What could have been improved?
- What do you think the main challenges are in completing the requirements for your major? What are you most worried about?
- Have you had much opportunity to interact with the [Lake University Scholars] program yet? What has that looked like?

- Have you had your meeting with the [Lake University Scholars] Advisor?
- One thing we've heard happens in meeting with [the Lake University Scholars advisor] is laying out a schedule for the time that you're here - could you tell us more about that?
- Is there anything you would like us to know about how to support students who, like you, transfer to [Lake University] from a two-year college?

b. Fall 2019 Interview Excerpts

1. Excerpt 1

INTERVIEWER: So, first of all, can you just tell me a little about yourself? What are you studying? Where did you start? That kind of thing.

RESPONDENT: Yes, so I've always wanted to be a veterinarian since I was little. Over at [River College] at the beginning of the [River College Scholars] program there, we had to take a course over the summer. I don't quite remember what it was called but it had something to do with figuring out what you wanted to do. And that solidified what I wanted to do, but it also directed me to a specific type of veterinarian. So, I found out that I really want to work with wildlife or a zoo. So, there's that (chuckles).

INTERVIEWER: What kind of specific veterinarian program is that then?

RESPONDENT: I don't think there's a specific program for it, but it just directed me into exactly what animals I want to work with.

INTERVIEWER: You can't be a veterinarian major as an undergrad, right? So, what's your major now?

RESPONDENT: Integrated biology and then I just decided to double major in zoology since there's a lot similar in the two.

INTERVIEWER: I'm also curious what was it about that summer course or program that helped you figure out what kind of veterinarian you wanted to be?

RESPONDENT: There were a couple of programs that we looked at on the computer and I don't know. One of them just talked about zoo veterinarians and I was like, "Yes, I'd really love to work with more exotic animals and stuff like regular cats and dogs."

2. Excerpt 2

INTERVIEWER: Have other people influenced you at all on how successful you think you'll be as a science student?

RESPONDENT: I don't know (chuckles). I don't know if this is really answering your question or not, but I find it helpful to study in groups and stuff. Talk about any problems that do come up and that I don't quite understand. Even talking to the faculty members and the professors. So, I know that stuff helps and even sometimes if I'm really struggling, I'll even go to my brother because sometimes he can help out too (chuckles).

INTERVIEWER: Have you found a study group here?

RESPONDENT: Not yet. It's more like I've been placed in groups inside of classes. So, we have group activities that help me understand things better.

INTERVIEWER: Is that experience, being placed in groups inside of classes, unique to [Lake University] or is that across all of those experiences you were thinking about?

RESPONDENT: I don't think I've ever really dealt with that outside of [Lake University] actually. Not that I can remember at least.

INTERVIEWER: So, the study groups from other courses would've been things that you did for yourself?

RESPONDENT: Mm-hmm.

INTERVIEWER: How did you find those people? How did that work for those other experiences?

RESPONDENT: It was mainly just in chemistry I had to do that with and it was just people that I quickly got along, and people that I just sat next to in class who also felt like they needed help in understanding everything. So, we helped each other and what we learned.

INTERVIEWER: Did you all set up meetings outside of class?

RESPONDENT: Yes.

INTERVIEWER: How did you do it?

RESPONDENT: Just trying to find a time that worked (chuckles) for everyone.

INTERVIEWER: And then you'd all meet together in a place?

RESPONDENT: Yes.

INTERVIEWER: Then what would you do when you met together?

RESPONDENT: Discuss problems that we had and try to figure it out together as a group. I don't know really how else to -

INTERVIEWER: So, you just went through, "I don't quite understand this"?

RESPONDENT: Yes.

INTERVIEWER: But you thought that those things really helped you?

RESPONDENT: Yes.

INTERVIEWER: Helped you with what?

RESPONDENT: Just understanding the material in more depth. Just in general (chuckles).

INTERVIEWER: It sounds to me that you've said that at [River College], maybe also in high school, you found study groups in chemistry specifically by just finding people who also needed help like you did, working with them. And then it sounds like this semester you haven't really found those study groups at [Lake University] yet. Maybe it's just a question of time, but do you have a sense of what's different between the [Lake University] experience and the [River College] experience?

RESPONDENT: I kind of feel like it was easier to find people who you get along with over at [River College] because it is a smaller school. So, it just seemed like - I don't know how to explain it. Here I find it's more difficult to find that sense of belonging and harder to find people that you get along with. That's just my personal experience so far though.

INTERVIEWER: Can I push a little bit and ask you to unpack that a little bit?

RESPONDENT: Yes.

INTERVIEWER: When you say that it's harder to find people you get along with, it's harder to have a sense of belonging, do you have any examples or stories? Can you take me to a moment in your experiences where you really felt that?

RESPONDENT: There have been some times in some of the groups that I was assigned with that I just don't really get along with the people. They don't have the same sense of - They don't really put as much effort into the project sometimes and I can't really see myself as getting in a study with them when they don't seem to care as much as me. (chuckles)

INTERVIEWER: So, it's a sense of, "I really care about doing well here and other folks don't care as much," is that what -?

RESPONDENT: Yes. Some people, at least.

INTERVIEWER: I really resonate with that. I'm trying to connect it, too. So, I think that makes a lot of sense to me for finding a good study group. So, you got assigned to a group in class, these people I don't really fit with. But I think one thing that could've happened, as you would say, is, "I need to find other people to study with." But that isn't something that has happened for you?

RESPONDENT: No. So, I have a lot of social anxiety. It's very hard for me to go up and talk to people.

INTERVIEWER: So, then, can I extrapolate slightly from that to say that at [River College] when you say it was easier, is it also that there are fewer people?

RESPONDENT: Yes.

INTERVIEWER: How big are your classes right now this semester?

RESPONDENT: (chuckles) So, I have some pretty big lectures talking about - Some classes are smaller. I know one of my classes, probably 30 or 40 people, but then there's other classes, ones that I am more struggling with, and there were hundreds of people in there.

INTERVIEWER: Like MicroBio for instance?

RESPONDENT: Yes.

INTERVIEWER: Can you estimate for me? Two hundred people? Four hundred people?

RESPONDENT: Probably between 200 and 400, yes.

3. Excerpt 3

INTERVIEWER: So, beyond your peers, have other people encouraged you or discouraged you to succeed in science specifically?

RESPONDENT: Not so much [at Lake University] because I haven't actually been able to talk to any of the professors, mainly because I really haven't made the time to. I couldn't find the time to. But I know over at [River College] there were some faculty who supported me in what I wanted to do and the same with my family and friends.

INTERVIEWER: What does that support look like?

RESPONDENT: Basically, not so much pushing me to do anything that I don't want to do. Even if with my parents, if I get a bad grade they don't really care as much because they just care that I'm actually going to college and trying this, and doing what I want to do.

INTERVIEWER: How do you know that they don't care about the bad grade but they do care about you doing those other things?

RESPONDENT: They've told me (chuckles). They said pretty much, as I said before, that it's okay if I get a bad grade. Just keep doing what I'm doing. Try as hard as I can and if I don't succeed as much as I'd personally like to, then it's still okay.

INTERVIEWER: Is there a particular memory that you're thinking of when they said those things? Could you share with me that actual memory that you're thinking of?

RESPONDENT: It's been so long (chuckles). Honestly, I can't really remember the memory.

INTERVIEWER: It's just a sense that this happened?

RESPONDENT: Yes.

INTERVIEWER: So, it also hasn't been recent.

RESPONDENT: Yes, it was in high school. Early high school.

INTERVIEWER: So, I'm going to go back a little bit and think you have a very clear path. You want to do this vet Med. You're thinking of wildlife or zoo vet. Can you tell me a story that would help me understand how you came to decide you wanted to be a vet?

RESPONDENT: As I've said, I always wanted to do it when I was little. Ever since I was little.

INTERVIEWER: Did you have pets?

RESPONDENT: I've had pets. I've had cats, dogs, birds. Right now, I have a bearded dragon and I've had scorpions in the past (chuckles).

INTERVIEWER: What is a bearded dragon? I mean, it's not a dragon, right?

RESPONDENT: (chuckles) It's a type of lizard. Do you want to see a picture?

INTERVIEWER: I would love to see a picture.

INTERVIEWER: How did you get into volunteering at the zoo?

RESPONDENT: I really wanted to get some experience in working with zoos. Whether it was volunteering or internships. So, I found the closest zoo to where I was living (chuckles) and I applied and went to the orientation and here I am.

INTERVIEWER: How long have you been volunteering?

RESPONDENT: Since the end of July I believe.

INTERVIEWER: Did you move down here to go to school out here?

RESPONDENT: Yes.

INTERVIEWER: Now you're living in the [Lake University] area?

RESPONDENT: Yes.

INTERVIEWER: I was just curious because you said it's the closest zoo.

INTERVIEWER: Do you think that volunteering at the zoo might open up some opportunities to working there or a summer internship or do you not have any idea yet?

RESPONDENT: I'm hoping so. I actually just applied for an internship there for their animal care. So, I'm hoping that my experience in volunteering there so far will help me get it (chuckles).

INTERVIEWER: Did you just see a flyer up on the wall to apply for that internship or how did you hear about it?

RESPONDENT: I looked at it online. So, I went through their website and everything found that they had an animal care internship, and I applied.

INTERVIEWER: Are you applying to other kinds of internships like that?

RESPONDENT: Not right now. I'm going to see how this one goes first, and then depending on how it goes I might apply for other ones.

INTERVIEWER: So, again, thinking your path is pretty well defined. How do people that you know, your family, teacher peers - what do they say to you about your decision to be a vet?

RESPONDENT: I keep hearing from professors a lot that it's very difficult to get into the vet program. And I know my parents have said it too. But, again, they're pretty happy and proud of me for trying to become a veterinarian (chuckles) in the first place.

INTERVIEWER: Professors [at Lake University]? Professors at [River College]? Teachers? Who are the people?

RESPONDENT: Both (chuckles).

INTERVIEWER: So, I heard you say that you haven't really talked to your professors [at Lake University].

RESPONDENT: There's been a couple of cases where I have. But not in detail on trying to get help for my classes and getting to know them a little on a more personal level.

INTERVIEWER: So, it's just kind of a meet-and-greet conversation?

RESPONDENT: Kind of, yes.

INTERVIEWER: Okay. And so, they hear you want to be a vet and they say that it's hard to get into?

RESPONDENT: Yes (chuckles), pretty much.

INTERVIEWER: I'm curious, if you don't mind me asking, how it makes you feel when people say, "Oh, it's really hard to get into that program"? Do you feel like they're encouraging? Do you feel like they're discouraging? Do you feel like it's a neutral statement?

RESPONDENT: Neutral statement. I know it's going to be hard to get into. I know how competitive it is. So, I don't really see it as being discouraging or encouraging. I just see it as they're stating a fact that I already know (chuckles).

INTERVIEWER: So, you said your teachers, you've heard that a lot, and your parents I think you said also. And then I also hear you had this experience at the zoo. I'm curious. Do you have a sense from broader society about the decision to be a vet? Have you gotten any ideas? That's probably a weird question. Is there anything outside of those specific people that you feel from society that tells you about your choice to be a vet?

RESPONDENT: Not really.

INTERVIEWER: (chuckles) There was no TV show that you watched growing up or other cultural norm kinds of things?

RESPONDENT: No.

INTERVIEWER: How did you even come up with the idea of being a vet?

RESPONDENT: My love for animals and in high school we started dissecting things and I enjoyed being able to learn about the anatomy of different animals.

INTERVIEWER: And you did a Google search, "If I like animals, I'm destined for things"?

RESPONDENT: (chuckles) Pretty much. There was some career, I guess, quizzes that sometimes I had to take for classes and stuff.

4. Excerpt 4

INTERVIEWER: I'm going to switch gears a little bit and I want to learn more about your experience in actually transferring to [Lake University]. Can you tell just what went well, the actual moving and starting [at Lake University]? What went well?

RESPONDENT: I think in general everything went well. Orientation and everything certainly helped and even going around on my time and walking around campus, seeing where my classes are, definitely helped as well. I can't really think of anything (chuckles) else right now.

INTERVIEWER: Is there anything that could've been improved that would have helped you?

RESPONDENT: Yes. So, I think that there definitely - I don't know exactly how, but definitely a way to better prepare me in terms of difficulty for classes. Because I went from [River College] where everything basically seemed more like high school and then I came here. I was like, "Wow, this is so much more different. So much more difficult than the classes that I previously took."

INTERVIEWER: Can you help me understand a little more about what feels so different and the difficulty? Is it that you have to cover more content? What are the things that -?

RESPONDENT: I think it partially deals with having to cover more content as well as I felt like over at [River College] it was more like just looking at something, memorizing for the test, and then that's it. But then here, it seems like more understanding in detail, and - I don't know how to phrase it. But if someone were to say from microbiology, if someone were to get this certain virus what happens next, and what can prevent this, and just understanding things in more detail versus on the surface, if that makes sense (chuckles).

INTERVIEWER: So, could you contrast that example? [At Lake University], someone would say, "If you get this virus, what could happen next?" At [River College] what would that question have looked like?

RESPONDENT: It's hard. I don't really know (chuckles) how to describe it actually. I felt like at [River College] it'd be more in terms of, say, showing a picture of a virus and them being like, "What kind of virus is this?" Instead of going more into detail. I don't know if that makes (chuckles) any sense.

INTERVIEWER: Yes, it does. It makes a lot of sense to me. The idea that you just have to do a matching game and, in your brain, is this the thing they want or not or do I have to be able to do more than just matching?

RESPONDENT: Yes.

INTERVIEWER: You said that helping you be prepared for that difference and I know you said I'm sure what. So, I won't (chuckles) necessarily ask to say what you think that could be. But I'm curious about how that felt in that first experience where you were like, "Oh, this is different." What were you feeling? What did that feel like?

RESPONDENT: I was feeling very overwhelmed. I was very far behind in some of my classes in terms of taking notes and everything. And I felt like for some of the exams I wasn't very well prepared because of how far behind I was and how overwhelmed I felt, and the shock (chuckles).

INTERVIEWER: This is probably a little uncomfortable so I apologize but if you situate yourself back into that feeling of overwhelmed you said you were feeling behind. Is it that you physically couldn't keep up with the notetaking? What was contributing to that feeling?

RESPONDENT: I was physically behind in specifically two of my classes. One of them was microbiology, which is why I probably still feel like I'm not (chuckles) doing a very good job in that. As well as my [other class]. Especially with microbiology, it's a hybrid class. So, all the lectures are online

and then we come into class on Fridays and just do a group activity pretty much. So, I always kept trying to print off the lectures and then watch the videos that they gave us, and take additional notes. But I just kept running out of time every single time, and I just kept getting so far behind. I was at a point where I couldn't do it anymore (chuckles) and I just started watching the videos and not so much taking the notes anymore because I just physically couldn't do it.

INTERVIEWER: So, thinking about that physical. I'm curious to know more about - So, you had five courses, which sounds like a lot to me. Were there other commitments on your time that were taking up so that you just physically ran out of time to do things?

RESPONDENT: Yes. So, as I said, I was behind in two classes and one was microbiology. The other one was [a different class], and for that class, we have to read books every week. And so, I felt like that was another very time-consuming commitment. As well as my volunteering over at the zoo, and then being in the [recreational club] as well as the [academically relevant club] here. It's just a lot that I took on all at once that I probably shouldn't have (chuckles) but I did anyway.

INTERVIEWER: Given that statement, is there anything you're planning to change next semester?

RESPONDENT: Probably going to stop being in the [recreational club] for a while. Just be in the [academically relevant club]. Something that is more directed towards what I want to do. Depending on what exactly happens with the internship, right now I only have four classes, I believe, instead of having five and committing to doing more homework I'm doing less now. And possibly volunteering a little less than I normally would. But other than that, that's pretty much all the changes I might take (chuckles). Considering at least.

5. Excerpt 5

INTERVIEWER: Do you think that there was a difference for students at [River College] who planned to transfer like you versus the students who were planning to just finish up at [River College] and be done? Graduate with the associate's and be done?

RESPONDENT: I haven't really thought about that, actually. I don't think there would be much of a difference between that. None that I can really think of at least.

INTERVIEWER: And then because you did graduate with an associate's, I'm curious just how you think about it. Will you graduate twice then when you get your bachelor's? How are you thinking about that?

RESPONDENT: I guess technically (chuckles) yes.

INTERVIEWER: So, if I asked you something about graduation, what would you be thinking about at this point?

RESPONDENT: Personally, I don't know. So, I have an older brother who is in his pharmacy school right now. His third year, and the way that he's taking it has influenced how I see it as well. Because I know he didn't really make much of a big deal of graduating. He also went to [River College], so he didn't really make about a big deal about graduating there and he didn't really make a big deal with his bachelor's. So, I don't really see it as a big deal either, but I also see it as graduation because it is something to be celebrated.

INTERVIEWER: Could you tell me a little bit more about what you mean by a big deal? What would that look like?

RESPONDENT: Actually, going to graduation sort of thing and (chuckles) -

INTERVIEWER: Walking with the robes on and everything.

RESPONDENT: Yes.

INTERVIEWER: So, you did not do that for [River College].

RESPONDENT: I actually did. I wasn't really planning for it, but everyone was excited because I was the first [River College Scholar] to graduate from [River College]. So, I felt kind of obligated (chuckles).

INTERVIEWER: So, if you had been following your brother's path, you would have not done it?

RESPONDENT: Yes.

INTERVIEWER: Can you tell me; how did you know people were excited about you walking?

RESPONDENT: Everyone kept talking about it. [Dean of college] over there, he kept showing me the stole and everything for the [River College Scholars] (chuckles) program. So, I was like, "Okay."

INTERVIEWER: It seems like a big deal.

RESPONDENT: I guess, yes.

INTERVIEWER: And are you thinking you will go to the commencement ceremony when you graduate from [Lake University] or are you still like, "I don't know"?

RESPONDENT: Probably not for the bachelors, but when I graduate and get my DVM..., that's probably when I'll walk.

INTERVIEWER: So, you are planning to go to vet school...

RESPONDENT: Yes.

INTERVIEWER: That's your goal. Great. So, my question would've been, plans for after college. But I feel like right now you've told me some of that. I don't know if you want to add anything to what you've told me already.

RESPONDENT: Right now, I'm looking into the next four years pretty much. Four, six years, I guess. Going to vet school ...and hopefully afterward trying to find a career related to zoo animals. Maybe wildlife.

INTERVIEWER: And when you say four to six years, could you break it up for me? How much more time do you think you have for your bachelor's versus how much is vet?

RESPONDENT: Including the semester, two years for my bachelor's and then probably four years for my graduate. I'm not actually sure because it is with zoo animals so I'm not really sure if there's more schooling I need to take for that since it's more diverse.

INTERVIEWER: That makes sense to me. Have you met with an advisor where you know two years is the amount of time it's going to take you [at Lake University]?

RESPONDENT: Yes, I met with the [Lake University Scholars] advisor. She said I should be able to finish my bachelor's in two years.

Appendix C

Spring 2021 (At the end of 2nd year at Lake University)

a. Interview Protocol

- How has this semester at [Lake University] been?
 - How did it compare to your other semesters?
- What classes did you take this semester?
 - How did you feel those went?
 - Compared to your last two semesters at [Lake University]?
 - Compared to classes at [River College]?
- How much do you feel you've found community at [Lake University]?
 - Have you made any progress with finding a study group or feeling like you belong at [Lake University]?
 - In the past you've also mentioned having social anxiety; how much of a factor has that been in this semester?
- Have you gotten to know your professors [at Lake University]?
 - How do those relationships compare with the ones you had with professors at [River College]?
- Do any people at [Lake University] stand out as helpful for you making connections and finding community at [Lake University]?
 - Advisor, teacher, peer, friend, roommate, etc.
- How involved were you with the [Lake University Scholars] program this semester?
 - What did that look like? What did you do?
- What has the [Lake University Scholars] program offered this semester, both in terms of social events and professional events?
- What is your plan for your next step after graduating from [Lake University] with your Bachelor's degree? Has it changed?
- How much longer do you expect to spend at [Lake University] before getting your Bachelor's degree?
- We noticed some big changes in your responses to the self-efficacy survey you filled out a few weeks ago from when you filled it out at [River College]. Do you have any ideas about what contributed to those shifts?
 - For example, while you were at [River College], you answered that you agreed that you were confident you could master the skills being taught in your remaining classes in your major department, but a few weeks ago you answered that you disagreed. Do you have a sense of what might have changed?
- Think of a time you felt really confident about your performance in a particular class—either one you're taking now or one you've taken in the past. What about it made/ makes you feel confident? Take me back to that moment; what were you feeling and experiencing?

b. Spring 2021 Interview Excerpts

1. Excerpt 1

INTERVIEWER: So maybe this is a difficult question because obviously the last semester and then some of the semester before that have been very different just with the pandemic, but have you noticed any interesting differences or similarities or things that have changed between like the first semester that you spent at [Lake University] and you know where you're at now at [Lake University]? What do you think has sort of changed in your time?

RESPONDENT: So definitely like the biggest change is my overall schedule. Obviously being in person, like had me more on track. There was times where I would just be on campus in between classes and I'd spend that time doing my homework and not it's like I'm just sitting at home in my bed and it's like oh, I could do my homework but you know there's some shows I've got to watch now too.

INTERVIEWER: Yes.

RESPONDENT: So it's a lot of it is like procrastination and just like kind of like the idea of like being in a place that I'm not used to doing my homework and I'm used to like sleeping and like watching TV and doing all these other things. Just kind of like that association. And another big difference is like not actually having like in person like being around people.

It's definitely a lot more different and like kind of like harder to, not like talk to people because like a lot of classes still have like discussion boards and everything. But it's definitely harder to kind of like get closer to classmates in terms of like making study groups and everything for me.

INTERVIEWER: Yes for sure, I definitely feel that. So on that topic then of sort of the community and the finding study groups at [Lake University] and stuff, how has that been going? You know have you been able to maintain much community in general? Have you been able to do much class work and studying with other people, what does that look like?

RESPONDENT: Not really. I'm the kind of person that would so much rather prefer to be in person than like video chat like, so like, like right now I'm like generally comfortable with you because I've been around you so often, but with other people and like meeting them for the first time it's definitely like my social anxiety like really kicks in and I just, I can't handle it.

INTERVIEWER: I understand I generally am even more stressed for Zoom interviews and stuff than in person, so I feel that yes. Have you, but you mentioned that you have been able to sort of talk to some people in like class online discussion groups and stuff, so has there been any support or structures in place to keep that class interaction going?

RESPONDENT: Usually the professors will kind of give like an assignment based on like the discussion board.

So like whether it's like you posting a question or like a topic, and other people are supposed to like reply sort of thing, so it's more like a mandatory thing if you want to get a grade more than like, hey, if you have any questions sort of thing, or like just want to talk about the class in general.

INTERVIEWER: Yes that makes sense, and sometimes mandatory discussion I feel like can work but maybe sometimes it's, doesn't go anywhere once you've checked off the box.

RESPONDENT: Yes.

INTERVIEWER: Yes, okay. So does that mean then that you have mostly been doing your class work and homework by yourself for the most part?

RESPONDENT: Yes.

INTERVIEWER: I'm sorry that's frustrating, it can make difficult classes even harder.

RESPONDENT: Yes.

INTERVIEWER: Yes, some especially in the last time that we interviewed you you mentioned a difficult time finding community and study groups at [Lake University] and your social anxiety having a big impact on that. It sounds like that's still been a really big factor right now?

RESPONDENT: Yes.

INTERVIEWER: But can you just say more about you know what that's looked like during the last semester?

RESPONDENT: Yes, so during last semester like I kind of said before, like it's mainly just been like me by myself for the most part, just like focusing on my homework. Of course there's like, not so much with like people on [Lake University campus] like community or anything but like I'm lucky enough to be able to like say, come home, spend some time with my family or like even spend some time with my roommates or my boyfriend.

But in terms of like community for [Lake University] there really hasn't been much interaction.

2. Excerpt 2

INTERVIEWER: So next question and you know a lot of these questions are obviously going to be weird during times of COVID and I expect that in the answer, that's totally fine, but have you gotten to know any of your professors [at Lake University] or sort of found any you know professors you're closer to than others, any mentors, anything like that?

RESPONDENT: A little bit, it's just been like basically getting to know them through their classes more so than anything else. But the, my professor for I believe it was [biology class], I got to like kind of know all of the work she does in terms of like she does a lot of like citizen science... Which I think is really cool. ...And then there's been a couple classes where I've had the same professor and I believe it was, I can't think of her last name right now, I think it's [last name].

INTERVIEWER: That's okay I'm not going to know these professors anyway.

RESPONDENT: Yes I think it's [last name].

INTERVIEWER: Do you remember any of the classes that you took from that professor where you got to know them?

RESPONDENT: [Genetics class] and then [biology class].

...

INTERVIEWER: And so you mentioned that the [biology] class was one of the classes this semester you sort of liked more and then also that you've gotten to know that professor. Do you think that that was a big part of why you liked that class more?

RESPONDENT: I'd say that's part of it yes. I think most of it was just really liking the content though.

INTERVIEWER: Okay, so it maybe started with the class content being interesting and then you kind of also grew to like that professor.

RESPONDENT: Yes.

INTERVIEWER: So in terms of the relationships you're able to make with professors at [Lake University] and getting to know professors at [Lake University], how does that compare with the kinds of relationships you had with professors at [River College]?

RESPONDENT: I would say it's definitely harder to get to know professors here compared to over at [River College].

For the simple fact that [River College] is just smaller, less people in the class. You get to know professors more on like a one to one level and they get to know you back too. Because I'm sure it's very difficult when they have a class of like 500 people to even remember your name you know.

INTERVIEWER: Yes for sure, and you think that that's just the biggest reason that getting to know professors is different, is just the size of the school?

RESPONDENT: Yes.

INTERVIEWER: I totally get that. And so maybe other than professors or something, do any people at [Lake University] stand out to you as helpful for making connections and finding community like an adviser, peers, friends, maybe your roommates. I don't know if they're [Lake University] students, anything like that?

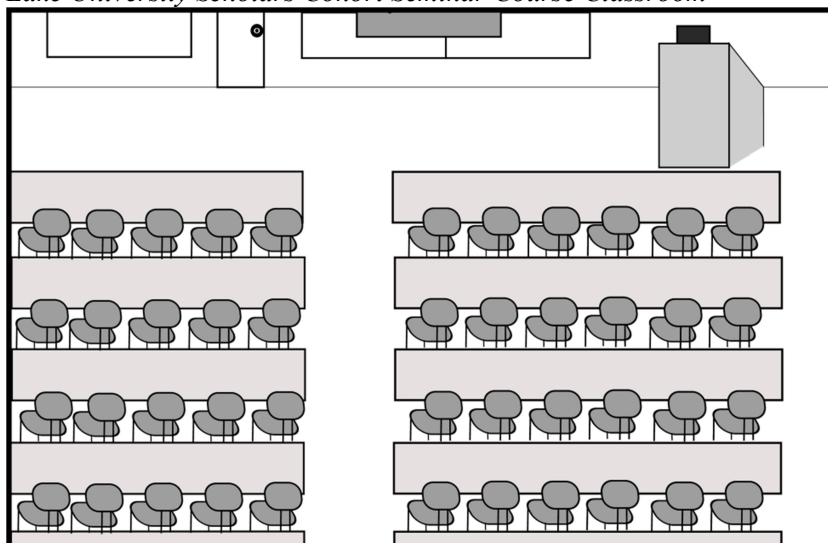
RESPONDENT: Yes some of my friends, one of my friends in particular...

And she was like the president of the [animal science club], oh my goodness, and she actually helped me get the, well helped kind of like pushed me a little bit, but in a good way, to get the secretary position for the club.

Drawings of settings adapted from the observational fieldnotes

Figure Appendix 2

Lake University Scholars Cohort Seminar Course Classroom



This is another example of a classroom and its size and environment at Lake University, specifically the classroom in which the Lake University Scholars seminar course is taught. Although it is not a lecture hall able to seat multiple hundreds of students, it is still larger than the River College Scholars research methods classroom.

Appendix D

Further Information on Methods of Reconstructing Narrative from Raw Data

a. Collecting Data with an Eye to Self-Efficacy

As described in the main manuscript, the data presented in Nicole's narrative was part of a larger project attending to the development of science self-efficacy for two-year college and transfer students. In this section we provide more detail about how this influenced various decisions about data collection.

b. Fieldnotes from River College Spring 2019

In the fieldnotes Wood collected from River College, she attended to explicit mentions of self-efficacy and interactions that might be opportunities to impact self-efficacy (see Sawtelle et al., 2012). Wood recorded direct quotes about students' confidence in their ability to do tasks as they worked on their research projects, or group work, or homework, etc. Wood also recorded direct quotes from teachers or student peers that were encouraging and seemed like they could provide opportunities for a social persuasion experience. Wood attended to people's body language and physical movements and verbal descriptions of their feelings and emotions to notice the potential physiological state experiences. Wood kept an eye out for moments that students mentioned previous mastery experiences they had that made them feel more confident in their ability to do their current task.

c. Journal Reflections and Interviews

As discussed above, the journal prompts and interview protocols also probed for self-efficacy. As can be seen in Appendices A.a., A.b., and B.a., the journal prompts and interview protocols were written explicitly to elicit self-efficacy.

d. How the Story Changed Over Time

Initially after that second interview with Nicole we noticed that when she spoke about social anxiety, she also described difficulty finding academic peer groups for projects and studying, but this had not seemed like a big challenge for her at River College. We thought early on that the story we would craft would be focused on the differences in Nicole's group work experiences between River College and Lake University. As we did more analysis, this felt like just one piece of a larger story that was more broadly about supporting characters and their impact in a variety of situations beyond just academic peer group work.

e. Moving Away from Self-Efficacy

As we worked through a deductive coding process of Nicole's primary data (journal responses and interview transcripts) for self-efficacy explicit statements and self-efficacy experience descriptions, we found that we were coding a low percentage of her data (less than a third). While we saw experiences that echoed social persuasion and vicarious learning experiences for self-efficacy, Nicole did not make many clear self-efficacy statements. However, she did speak regularly about the impact of supporting characters, like faculty, cohort staff, family, and friends. Having identified this central theme in Nicole's story, other pieces of Nicole's data started to stand out, like how the cohort faculty and staff influenced Nicole to participate in the graduation ceremony from River College despite her brother not having participated and not thinking graduation was a big deal. We also were seeing significantly less of Nicole describing influential supporting characters in what she told us about her experiences at Lake University.

Appendix E

Narrative Analysis

a. Summarizing Raw Data to Describe Characters and Settings

In order to reorient to the data with this emerging theme, we decided to take a different analysis approach and re-examine the data through a narrative analysis lens. To organize and slightly reduce the data, we did a rough coding process of Nicole's primary data as it oriented to impactful supporting characters. In this process, we found large chunks of data that were relevant to this story. This coding process captured most of Nicole's data. To continue down this analysis path, Wood organized these data around the elements of narrative analysis – plot components/ commonplaces. We thought of this as writing a description of the characters (who, part of sociality), the settings (where, place combined with aspects of sociality), and so on. In this early processing of the data, Wood initially copied and pasted pieces of data directly to describe these elements before beginning to summarize the data into her own words.

For example, to describe the main character Nicole, Wood initially compiled excerpts from Nicole's own words (see Table 2A) along with pieces of the fieldnotes and visual observations from recorded interview videos. Most of these excerpts can also be seen in more detail in the sections above. Table 2A shows the process of summarizing primary data interview excerpts into descriptive statements about Nicole. This type of process was then worked into introducing Nicole (see section IV.A.).

b. Triangulating Data to Craft Vignettes

Writing paragraphs for the plot, or problem and resolution, was a longer process than describing the characters and settings. This process began with summarizing excerpts of data in bullet points. Then those summaries were grouped together to tell stories, particularly comparing and contrasting similar experiences at River College with Lake University pre- and post-transfer. After grouping those summarized bullet points, we wrote full paragraphs to tell a story rather than simply listing a series of quotes, but privileging language pulled directly from the excerpts or explicitly quoted. At this point we also pulled in additional description from secondary data (e.g. fieldnotes or Nicole's peers' journals). See Table 3A for the example of how we triangulated data from Nicole's time in the River College research methods course to craft our first vignette (Section IV.C.1.).

Another example of this process of summarizing raw data to craft a vignette would be to summarize Appendix B.b.2. as the following. Nicole "find[s] it helpful to study in groups," and turns to "faculty members and professors" when she doesn't understand problems. "Sometimes," she says, she "even go[es] to [her] brother because sometimes he can help out too." Since transferring to Lake University, Nicole has "not yet" found a study group but has been "placed in groups inside of classes." This is a new experience for her, and in previous courses she found study groups without them being assigned. She describes it very matter-of-factly like it was not a huge hurdle, saying, "it was just people that I quickly got along [with], and people that I just sat next to in class who also felt like they needed help in understanding everything." She says they set up meetings outside of class by "just trying to find a time that worked for everyone." Then they would meet together and "discuss problems that [they] had and try to figure it out together as a group." Even though Nicole has been assigned some study groups in classes, she feels that she does not have useful study groups at Lake University yet, even though she did not have a hard time with that at River College or in high school. She says that she "feel[s] like it was easier to find people who [she got] along with over at [River College] because it is a smaller school." She also attributes her difficulty finding study groups at Lake University or feeling that the assigned groups are successful to her social anxiety, saying, "it's very hard for me to go up and talk to people." This paragraph and the process of making it by summarizing an excerpt of data was used to develop the second vignette (Section IV.C.2.) in the main paper. We then used that kind of writing process to make each of the vignettes.

c. Member Checking Validity

As we crafted the story to tell about Nicole and the impact of supporting characters on scenes in her experience at River College and at Lake University, we thought we could argue that Nicole had more impactful supporting characters who shaped her story at River College than at Lake University. However, we either wanted to make sure that this story was accurate to her continued experience at Lake University or check on how her experience had shifted over time and possibly give more of a resolution at the end of our story. We also know that a lot of transfer research does not follow students for very long at their FYCs post-transfer, and in our broader project as well as specifically this case study, it was our goal to gather more longitudinal data on students throughout their FYC experiences.

To accomplish this goal of checking on the validity of the story we had developed so far and getting a little more information towards a resolution in our story, we interviewed Nicole again in Spring 2021. See Appendix C for this interview protocol. We focused on things like clarifying Nicole’s answers to the self-efficacy survey we had given her multiple times, checking on how much of an effect her social anxiety has continued to have on her experiences at the FYC, asking if she has made any connections with professors and peers in her continued time at Lake University, etc. We found out that most of her answers to the self-efficacy survey that changed to lower values were really just because they did not apply to her anymore, for example, because they asked about math classes of which she had none left to take. We also learned that she continued to have difficulties getting to know her peers and professors but she had made some significant connections, particularly with a friend who was in the same club as Nicole and a particular professor who had made an impactful impression. This allowed us to end the story with a happier note and point out the kinds of settings and commonplace conditions that could help students like Nicole form connections and find community after transferring to a FYC.

Table 2A.

Summarizing Primary Data to Introduce Main Character Nicole (Used to Craft Section IV.A.)

Excerpt of Nicole’s interviews	Authors’ summary
“I have a lot of social anxiety. It’s very hard for me to go up and talk to people.” (Interview 2)	Nicole has social anxiety
“I’ve always wanted to be a veterinarian since I was little. Over at [River College] we had to take a course ... it had something to do with figuring out what you wanted to do. And that solidified what I wanted to do, but it also directed me to a specific type of veterinarian. So, I found out that I really want to work with wildlife or a zoo.” (Interview 2)	Nicole wants to be a wildlife or zoo veterinarian
“[My major is] integrated biology and then I just decided to double major in zoology since there’s a lot similar in the two.” (Interview 2)	Nicole is double majoring in integrating biology and zoology
“I really wanted to get some experience in working with zoos. Whether it was volunteering or internships. So, I found the closest zoo to where I was living and I applied and went to the orientation and here I am.” (Interview 2)	Nicole is proactive in pursuing opportunities oriented towards what she wants to do
“I keep hearing from professors a lot that it’s very difficult to get into the vet program. And I know my parents have said it too. But, again, they’re pretty happy and proud of me for trying to become a veterinarian in the first place.” (Interview 2)	Nicole has heard from professors and family that her path is difficult, but her family is proud of her
“[at Lake University] I haven’t actually been able to talk to any of the professors, mainly because I really haven’t made the time to. I couldn’t find the time to. But I know over at [River College] there were some	Nicole has not gotten to know her FYC professors but was supported by faculty

faculty who supported me in what I wanted to do and the same with my family and friends.” (Interview 2)	at River College and her family and friends
“It’s mainly just been like me by myself for the most part, just like focusing on my homework. ... I’m lucky enough to be able to come home, spend some time with my family or like even spend some time with my roommates or my boyfriend. But in terms of community for [Lake University] there really hasn’t been much interaction.” (Interview 3)	Nicole does not feel she has significant community at Lake University
“I find it helpful to study in groups and stuff. Talk about any problems that do come up and that I don’t quite understand. Even talking to the faculty members and the professors. So, I know that stuff helps and even sometimes if I’m really struggling, I’ll even go to my brother because sometimes he can help out too.” (Interview 2)	Nicole likes to study in groups and seek help from faculty when needed, and she sometimes goes to her brother for academic help
“I have an older brother and the way that he’s taking it has influenced how I see it as well. Because I know he didn’t really make much of a big deal of graduating. He also went to [River College], so he didn’t really make a big deal about graduating there and he didn’t really make a big deal with his bachelor’s. So, I don’t really see it as a big deal either, but I also see it as graduation because it is something to be celebrated.” (Interview 2)	Nicole’s brother is influential to her decisions
“I would do summer [internships], but my family lives in [state] so we go there every year in the summer, and that’s really the only time we can [so I’m only applying for spring internships.]” (Interview 2)	Nicole has family obligations that she prioritizes
“No[thing I would have done differently]. Maybe looked further into my other interests because I do feel pretty confident in wanting to be a veterinarian but sometimes, I do have my doubts. Because I also really love art, and drawing, and painting.” (Interview 2)	Nicole also likes creative pursuits but is fairly confident in her academic decisions

Table 3A.

Example of Triangulating Data Sources to Develop First Narrative Vignette (Section IV.C.1.)

<p>Narrative summary</p> <p>Nicole had an easy time finding a project partner, despite her social anxiety. Her partner Colette is very confident in working with fish.</p>	<p>Daily in-the-moment fieldnotes</p> <p>“[Colette] supplying terminology like “bubbler” → very confident person, seems to have background working in aquariums or zoos or with fish that leads to mastery self-efficacy experiences”(3/21)</p>	<p>Nicole’s reflective weekly journals</p> <p>“I’m hoping to work with a group that has a similar interest... I believe that agreeing on a project will go smoothly as I am still open to ideas.”(Wk 3)</p> <p>“I plan on doing a research project on how water quality affects fish. ...also because someone else in the group is interested in doing this research.”(Wk 4)</p>	<p>Colette’s reflective weekly journals</p> <p>“I feel extremely confident. I like to fish ...I also manage my own fish tank and know the ideal conditions for fish.”(Wk 4)</p> <p>“We can get our fish easily by going to the [store] and buying them, as they are cheap.”(Wk 4)</p>	<p>Nicole’s reflective post-semester interview Spring 2019</p> <p>“I just remember standing in the hall. ...[I]t sounded like [Colette] also wanted to work with animals so I just asked her if she had a partner yet. I think, at the time, she was thinking about working with [another student] as well. But I asked to join the group and that’s kind of how it started.”</p>
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<p>Narrative summary</p> <p>Colette tried to get young perch but instead got minnow baitfish, so Nicole and Colette had less information on their fish than they expected. They also faced a difficulty gathering water for their fish tanks, but Nicole framed it as a learning experience.</p>	<p>Daily in-the-moment fieldnotes</p> <p>“there were two large tanks of distilled and of creek water with the fish (about 5 each) and also two smaller tanks with distilled and creek water respectively with the frogs (3 each) The fish project team could only get perch minnows instead of perch There is little info, no growth charts, etc. Don't even know their age or if they'll grow more etc”(4/11)</p>	<p>Nicole's reflective weekly journals</p> <p>“Unfortunately, during our drive with [professor], we were unable to find a good place to collect the water, so I only feel a little satisfied with our progress. On Thursday, we will be going out again to try and get all of the water that we need water to do anything else with our project, I feel pretty confident with our ability of getting it and preparing it for the fish.” (Wk 6)</p> <p>“On Monday, I learned a new research skill, not only for this project, but also for future projects I may do. ...[professor] told us how this was a learning experience: make sure you know exactly where you are getting your materials from and make sure you have enough time to do it.” (Wk 6)</p>	<p>Colette's reflective weekly journals</p> <p>“They are perch minnows, and the man who gave them to me at the bait shop had no idea what I was saying when I asked for “Perch fry.” So now our goal is to measure their growth, if any.”(Wk 5)</p> <p>“I went to pick up the fish at the bait shop ... Turns out they're just Perch minnows meant for catching perch.”(Wk 5)</p>	<p>Nicole's reflective post-semester interview Spring 2019</p> <p>“[We] had a specific place we had in mind. They had a completely different place that they had in mind. (chuckles) We probably really should've, in our own time, went to our spots and see if we were able to get water. ... We didn't (chuckles) so we were just driving around [river] trying to find spots. We actually drove past an area for docking boats. We didn't see it though because it was down a hill. Because we didn't find anything that day, we didn't know it was there. We came back. We didn't have anything”</p>
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<p>Narrative summary</p> <p>To add to their challenges, many of their fish also got a disease and started dying.</p>	<p>Daily in-the-moment fieldnotes</p> <p>“[Colette] just said “I’m so glad I worked where I worked because otherwise I’d be like ‘what is happening?’” (Worked at aquarium; talking about white cysts- she asked her friend for help when it originally happened to her personal beta fish)”(4/18)</p> <p>“trying to get pic of fish white spots Partner pulled dead fish out of trash to get pic of it using gloves Difficulty seeing spots with white background Tried putting black spiral notebook behind fish tank”(4/18)</p> <p>“The fish have all developed itchy white cysts so they’re discussing with Ron how to address it Could be why they’ve died not sure Treatment is a fizzy tablet in the water”(4/18)</p>	<p>Nicole’s reflective weekly journals</p> <p>“I would normally be frustrated about the feeling of being very behind in our project, however, the professors talked about us being able to continue our research into the next semester. Therefore, at the moment, I do not feel that frustrated about anything.” (Wk 7)</p>	<p>Colette’s reflective weekly journals</p> <p>“...Also, two distilled tank fish, out of six total, have died.” (Wk 7)</p> <p>“I am very proud that we have started collecting data on the fish. However, I am frustrated by the fact that we seem to be losing fish quite frequently. We started out with six fish per tank and are now down to three fish per tank.”(Wk 7)</p> <p>“We found that in both tanks, the fish showed early signs of ich. We properly treated them by placing 3 ich guard tablets in each tank.”(Wk 7)</p>
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Narrative summary	Daily in-the-moment fieldnotes	Nicole's reflective weekly journals	Colette's reflective weekly journals	Nicole's reflective post-semester interview Spring 2010
<p>Despite these difficulties, the students persevered in completing a project, learning other skills like testing the water pH in their fish tanks, and made and presented a poster. Even though it was stressful having difficulty getting water, Nicole says she found it fun.</p>	<p>“[professor] showing [Nicole] and partner calibration liquids and tool for measuring properties of water [Nicole] is testing water in tank now Testing pH [professor] told them how to do everything”(4/18) “[Colette] and [Nicole] said they're still working on their poster “It's rough” [professor]: “when is this due?” Students: “today” [Colette] said we were still getting data earlier this week [professor] said “you could have started with intro and all that good stuff” etc”(4/25)</p>	<p>“I am most proud of the fact that not all of our fish died, as we thought they might have by now. ...The main thing that I would change would be the type of fish we use in our experiment. If I were the one picking up the fish, I would have taken a little more time to find the yellow perch.” (Wk 10) “I think that the most memorable experience from the entire experiment was receiving the water from the [river]. I found it to be very fun” (Wk 10)</p>	<p>“I am proud that we even got the project to work out. We didn't get the fish we wanted and it wasn't easy to get the water, but we managed to finish it all. ...If I could change what has happened, I would go back and order perch fry from a supplier and pick a known boat launch for water collection in the first place.”(Wk 10)</p>	<p>“Yes, [the instructors] were very lenient especially because it was the first time. They said that they didn't even know how to teach this sort of thing, too. So, they weren't very hard on us for anything.”</p>

Table 4A.

Definitions of Narrative Inquiry Terms

Commonplaces	Definitions	Overlap with Plot Components
Place	Physical location in space	Where
Temporality	Time, not necessarily chronological or linear, depends on the story/ characters and can include flashbacks	When
Sociality	Internal and external/ environmental conditions and the interactions between those	Who, why, how