

# Narrative Analysis of a Woman's Experience Transferring from a TYC Reveals Impact of Supporting Characters

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## ABSTRACT

In this paper, we use narrative analysis to examine the case study of "Nicole" (pseudonym), a student in a science, technology, engineering, and mathematics (STEM) program who transferred from a 2-year college (TYC) to a 4-year college (FYC). We draw from longitudinal qualitative data that follow Nicole's experience pre- and posttransfer, while acknowledging the impact of her experience at the TYC. We use an anti-deficit lens by highlighting the role of supporting characters for Nicole, especially at the TYC. Narrative analysis of Nicole's experiences highlights differences in her sense of community at the two different institutions. Organizing our data in these narrative components revealed how impactful supporting characters are in Nicole's story and how drastically they can shape the outcome of scenes in her story. Instructors and programmatic staff at FYCs who aim to better support transfer students in their transition can learn from the kinds of scenes Nicole cited as helpful in her time at the TYC as well as the FYC. It is our aim in sharing Nicole's story to provide guidelines for how faculty and program directors could be impactful supporting characters to create welcoming settings for transfer students.

## INTRODUCTION

Academic institutions need to improve support for students who want to transfer between schools. There is research on how to do this, but it has mostly focused on the pretransfer student experience or the transitional period without a focus on longitudinal data into the posttransfer experience. We not only need to support students to transfer but also to continue this support at their new institution. Transfer students have different needs than students who start their college careers at an institution. Additionally, the literature calls for more research specifically focused on transfer in science, technology, engineering, and mathematics (STEM) fields. In this paper, we share the case study of Nicole (pseudonym), a transfer student from a 2-year college (TYC) to a 4-year college (FYC) who also participated in a cohort program for science students at "River College" (TYC pseudonym) and at "Lake University" (FYC pseudonym).

We will begin with an overview of background literature on TYC and transfer student experiences. Then we will describe our qualitative methods, using embedded case study and narrative analysis. After introducing the settings and characters in Nicole's story, we share vignettes that highlight the differences in Nicole's sense of community at the TYC and FYC. We close with a discussion of the ways FYCs and TYCs can partner to support transfer students.

## LITERATURE REVIEW AND MOTIVATION

In this section, we open with an overview and summary of transfer and definitions of various terms. Then we summarize the current state of research on transfer and point out the gaps in the existing literature. Gaps include: 1) a need for more work focusing on the experiences of women TYC students; 2) a need for more research on the

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experiences of TYC students in STEM through and posttransfer; 3) care on the part of TYC researchers to use an anti-deficit perspective and position our students as capable; and 4) a need for more partnerships between TYCs and FYCs in research, policy, and practice. In short, we need to better support TYC students in their academic experiences and in meeting their goals.

### Overview of Transfer

Transfer can mean many different things in educational pathways. Most common in the literature is a discussion of vertical transfer,<sup>1</sup> the transfer of a student from a TYC to an FYC. Often-times, this transfer takes place after a student earns an associate's degree or spends about 2 years at the TYC and transfers into the FYC at a "junior" level. There are, however, many other kinds of transfer pathways, including lateral, swirling, reverse, and more (Lester *et al.*, 2013; Taylor and Jain, 2017; Wickersham, 2020). Outside the literature, institutions may consider students to be transfer students if they come in with any college credits. This definition of a transfer student could include students who gain college credit in high school (e.g., advanced placement courses) or those who move from one FYC to another. Vertical transfer is often a mission of community colleges (Wang *et al.*, 2016), and many students who start at TYCs ultimately aim to receive bachelor's degrees.

Eighty percent of first-time-in-any-college (FTIAC) students beginning at TYCs indicate a desire to earn a bachelor's degree or higher (Horn and Skomsvold, 2011), and those who successfully transfer to FYCs are equally as likely to earn a bachelor's degree as their FTIAC counterparts starting at FYCs (Jackson and Laanan, 2011; Reyes, 2011). Yet, of students in STEM programs, those who start at TYCs are *less likely* to earn a bachelor's degree than FTIAC students starting at FYCs (Wang, 2015). Thus, the problem would appear to lie in supporting TYC students through transfer.

Although nearly half of all postsecondary students of color were attending a community college<sup>2</sup> as of 2016 (Juszkiewicz, 2016), the transfer function is inequitable, in that "white students transfer at higher rates on a national scale" in the United States (Jain *et al.*, 2016, p. 1013). Although students of color make up more than one-third of the students enrolled in TYCs, this percentage drops for students who transfer to FYCs and for students in STEM programs (Hagedorn and Lester, 2006; Wang, 2013; Wang *et al.*, 2016; Bahr *et al.*, 2017).

Despite the barriers to success in TYC student transfer, we want to be sure to not deficit-frame these students. Wang (2015) also found unique benefits to attending community colleges that could moderate the "penalty" of community college attendance, specifically by fostering students' "momentum" in their STEM course work. Additionally, Bahr *et al.* (2017) found that "[Black, Hispanic, and Native American] students who exited the curriculum without transferring were, on average,

<sup>1</sup>Although these are commonly used words in the transfer literature, we encourage researchers to develop other terminology that does not inherently reinforce stigma against TYCs and TYC students by implying that transfer from a TYC to a FYC is vertically upward.

<sup>2</sup>Note that community colleges and TYCs are essentially synonymous for the purposes of our work, and we have chosen to tend to use the term TYCs, except where citing work and using the terminology of the authors being cited.

more likely to complete a community college credential than were their advantaged peers" (p. 20). In short, we are not supporting TYC students in meeting their goals of transferring and receiving bachelor's degrees.

### Transfer Student and TYC Women's Experiences

Students who start at and attend TYCs are more likely to be women, first in their family to attend college, students of color, or from low-income families as compared with their counterparts entering FYCs (Jain *et al.*, 2011, 2016; Wickersham and Wang, 2016; Wang *et al.*, 2017; Starobin *et al.*, 2016; Bahr *et al.*, 2017). More than half of women enrolled in postsecondary education are attending community colleges (Snyder and Dill, 2015; Wickersham and Wang, 2016). Despite this making TYCs an important site for potentially increasing the participation of women in STEM, "the majority of research, in particular of women, in colleges and universities, has focused primarily on the pathway from high schools to four-year colleges and universities" (Starobin *et al.*, 2016, p. 1040). Most research on "the gender gap in STEM education" (Marco-Bujosa *et al.*, 2021, p. 542) documenting differences in pay and positions in STEM fields has not included TYCs.

There are also specific topics areas in which TYCs have not been researched as much as their FYC counterparts. The vast majority of research on the transfer process has historically been quantitative (Kozeracki, 2001; Laanan *et al.*, 2010). Wickersham and Wang (2016, p. 1002) say: "The current literature base dealing with transfer intent and life experiences of female students beginning in STEM at community colleges is very limited." Additionally, few studies have investigated the social, institutional, and environmental contexts of STEM learning experiences for women (e.g., Starobin and Laanan, 2008; Wickersham and Wang, 2016; Shadduck, 2017; Marco-Bujosa *et al.*, 2021). Wang *et al.* (2017, p. 596) add: "Despite the fairly rich body of research on active learning, empirical literature in this vein is primarily situated within the 4-year college context, and 2-year college students and their experiences have been largely neglected." In short, more work needs to be done focusing on the experiences of women attending TYCs.

### More Research Needs to Examine the Posttransfer Transition

While there is some research on STEM-intending TYC students broadly, this literature is quite general and does not cover the posttransfer experience or the impact of time at a TYC on the student's FYC experience (Shaw *et al.*, 2019). Nor does the literature focus on more complex patterns of transfer, such as swirling (students who move between TYCs and FYCs) or lateral transfer (FYC to FYC or TYC to TYC), and instead generally focuses on vertical transfer. In fact, vertical transfer (from a TYC to an FYC), despite being the most commonly discussed form of transfer in the literature, is actually rare (Taylor and Jain, 2017; Lester *et al.*, 2013; Wickersham, 2020). TYC students do not follow linear educational pathways. Wickersham (2020, p. 108) describes TYC students as "the most mobile in higher education," and Taylor and Jain (2017, p. 278) argue that one reason transfer pathways are ineffective is a "higher education system that was not designed for nor has adapted for the mobile college student."

Furthermore, the literature that does examine the transfer students' experiences at the receiving FYC generally focuses on a short period of time early in the transition to the new school, and little research follows students longitudinally (Wickersham and Wang, 2016; Jain *et al.*, 2016; Bahr *et al.*, 2017). Exceptions include Wickersham and Wang (2016), although their focus is on the TYC experience that leads to successful transfer. To further the research in diversifying STEM, we need more work that studies the experiences of STEM-intending TYC students through their transfer to FYC and all the way to earning a degree.

### Research on TYCs Should Adopt More Anti-Deficit Framing

As researchers turn to the posttransfer experience, there is a tendency to focus on challenges faced by students without explicitly adopting anti-deficit framing (Laanan *et al.*, 2010; Jain *et al.*, 2011; Starobin *et al.*, 2016; Urias *et al.*, 2016). Exceptions to this discourse include Urias *et al.* (2016, p. 23), who state, "Rather than adding to the deficit-oriented literature and discourse on men of color, insights for this study were derived from men who successfully navigated the community college system." Similarly, Laanan *et al.* (2010, p. 177) aimed to "move beyond the 'transfer shock' concept" and instead focus on transfer student capital.

Historically, transfer shock (Hills, 1965) has been a very common topic of focus in much of the research on transfer students. Laanan *et al.* (2010, p. 177) describe transfer shock as follows: "Researchers sought to describe transfer students' academic performance as measured by grade point average (GPA) and the extent to which the GPA drops after the first or second semester of attendance at the senior institution."

Recently, some studies have focused more on logistical, physiological, and social factors impacting the transfer experience, although something akin to transfer shock remains a commonly cited difficulty for transfer students. However, students often talk more about difficulty acclimating to a big university rather than an explicit GPA decrease (Townsend and Wilson, 2006; Urias *et al.*, 2016). Shaw *et al.* (2019) point out that even successful students at FYCs posttransfer are "susceptible to negative stigma of having attended community college" (p. 658). Townsend (2008, p. 77) argues that we need to consider that "transfer students are experienced college goers," despite a common stigma against transfer students and deficit framing of attending and transferring from TYCs (Jain *et al.*, 2011; Shaw *et al.*, 2019; Gauthier, 2020). In short, as TYC researchers, we should mindfully position our students as capable in systems that might fail.

### Need for Partnerships between TYCs and FYCs

Traditionally, research on (and programming for) transfer students has put the responsibility of promoting transfer on the TYCs (Townsend and Wilson, 2006; Mery and Schierring, 2011; Wang *et al.*, 2016). More recently, there has been some acknowledgment and recognition of the role of FYCs in the transfer process. We do see examples of research focusing on the FYC role, like Urias *et al.* (2016) looking at the institutional responsibility of the FYC to the students who transfer there; and Jain *et al.* (2011) in creating a critical race theory-based set of elements for a transfer-receptive culture at an FYC. Additionally, research is clear that effective articulation agreements between TYCs and FYCs are critical to successful transfer (Starobin *et al.*,

2016; Bahr *et al.*, 2017; Wickersham, 2020), and strong relationships between TYCs and FYCs seem to increase transfer rates (Mery and Schierring, 2011).

Ideally, partnerships would exist between TYCs and FYCs valuing the roles of both types of institutions. Researchers have also pointed out the need for TYCs to be included in such partnerships, not solely moving the responsibility to FYCs. Mery and Schierring (2011, p. 33) claim that "community colleges must be involved in any effort to increase baccalaureate attainment rates." There are many models for what these partnerships might look like (e.g., Phelps and Prevost, 2012; Hirst *et al.*, 2014; Cochran *et al.*, 2016; DeLeone *et al.*, 2019), but they all have in common an acknowledgment of shared responsibility in the transfer process.

While policies and practices to support transfer students are important, we also know that institutional culture is critical (Ishitani and McKittrick, 2010; Wang *et al.*, 2017). After students transfer, social integration into the receiving institution and its culture is crucial to success, including participating in organizations, and experiencing positive student-teacher relationships and supportive classroom environments (Townsend and Wilson, 2006; Jain *et al.*, 2011; Starobin *et al.*, 2016; Urias *et al.*, 2016). However, transfer students have different needs and expectations from students native to the institution (Townsend and Wilson, 2006; Jain *et al.*, 2011; Mery and Schierring, 2011; Wang, 2013; Wang *et al.*, 2017). For example, TYC and FYC students are motivated by different factors, like the applicability of learning to finding jobs (Wang *et al.*, 2017; Wickersham, 2020). Given these different needs, the FYC student social integration efforts intended for FTIAC students may work against the integration of transfer students (Townsend and Wilson, 2006; Townsend, 2008). Similarly, Nuñez and Yoshimi (2017) found that transfer students considered their needs to be different from other students' native to their receiving institutions, "particularly with respect to the emphasis on academic engagement and goal orientation and a de-emphasis on purely social engagement" (p. 185).

Along these lines, Urias *et al.* (2016) found that people matter, maybe more than programs, to transfer students from TYCs to FYCs. Urias *et al.* (2016, p. 28) wrote, "What was made evident throughout these discussions was that the people with whom the participants connected and the relationships that were established were what made these programs special." Lopez and Jones (2017, p. 176) saw similar results, saying, "The more that students visit and approach instructors after class, discuss career plans, and ask advice about class projects at both the community college and university, the more likely they are to adjust better academically in a university." Additionally, at the TYC level, Marco-Bujosa *et al.* (2021) found that women and men students considered peer "social support essential to their academic success and persistence" (p. 551).

In this paper, we build on the literature by telling the story of a successful woman's (Nicole's) experience of transfer in a STEM program from a TYC to an FYC. This addresses the calls for more research to seek to understand "local needs of particular communities and students" (Banks *et al.*, 2007, p. 25) by focusing on transfer students from TYCs in STEM programs specifically, as well as focusing on the transition from TYC to FYC and the posttransfer experience while at the FYC. We use longitudinal data that follow her experience

posttransition, while acknowledging the richness of her experience at the TYC. We use an anti-deficit lens, as we saw the literature call for, by highlighting the role of supporting characters in Nicole's story, and we discuss how ingrained partnership between the TYC and FYC would impact a student's experience.

## METHODS

Our goal in this paper is to share the story of one student, Nicole, as she moved from the TYC to the FYC. In the following sections, we describe our methods for collecting longitudinal data over 4 years using an embedded case study approach. We first describe our positionality and the broader work in which this study of Nicole is situated. We then describe our embedded case study data collection and then our process of narrative inquiry to synthesize the rich details of Nicole's story.

### Researchers' Positionality

The broader project in which this case study is a part focuses on self-efficacy (Bandura, 1978), or the confidence and ease people feel regarding their ability to perform a task (Ajzen, 2002). Thus, the data collection and analysis were initially oriented toward observations on how self-efficacy might be influenced (often referred to as sources of self-efficacy). While Nicole's narrative ultimately turned away from being about self-efficacy (see Supplemental Appendices D and E for more details), the underlying design and focus of the study prompted and analyzed for statements about students' confidence in their academic abilities and the experiences that would influence those statements. Neither L.A.H.W. nor V.S. transferred from a TYC in their baccalaureate educations, and thus they committed to centering the voices of the TYC students in their work. The data collection and analysis tools in the larger project and in this case study privilege the sharing of the firsthand experiences of the TYC students.

Additionally, L.A.H.W. is a PhD candidate in physics education research. She is a white woman who struggles with anxiety who finished her baccalaureate degree at a small school with a supportive, tight-knit physics department and struggled finding community after starting graduate school. She is interested in supporting women and students of color to succeed in STEM, particularly in terms of finding community and feeling they belong, as well as in how emotions interact with learning. The larger project in which Nicole is involved is part of her dissertation work, so L.A.H.W. was intentional about recording and eliciting students' emotional responses as they relate to the physiological state sources of self-efficacy. V.S. is also a white woman in physics, and L.A.H.W.'s PhD advisor, who has a long history of exploring self-efficacy in qualitative work (e.g., Sawtelle *et al.*, 2012; Sawtelle and Turpen, 2016).

### Data Collection: Embedded Case Study

The story of Nicole is part of a larger study understanding the transition of students from a supportive TYC environment to a receiving FYC and examining the self-efficacy experiences in their transitions. Across this larger study, we gathered data in the style of an embedded case study (Scholz and Tietje, 2002; Yin 2003). This means that we gathered different kinds of data and examined different levels of our research sites—data that focused on individual students and instructors and data that

focused on the environments in which those participants were situated. Broadly, then, we have taken field notes in many environments, including classrooms and study group/tutor spaces, and these field notes have focused on individual students and instructors and their interactions as well as the environments in general; we have also conducted interviews with student participants, and we have gathered written journals from these student participants. For Nicole's case, our data included more than 100 pages of field notes (focused more broadly than just on Nicole), around 3 hours of interviews with Nicole, and about 10 pages of journal entries from Nicole (See Supplemental Appendices A, B, and C for data collection materials and some direct excerpts of data).

Our focus on investigating student self-efficacy across the TYC and FYC environments influenced the data collection. For example, in L.A.H.W.'s field notes, she attended to interactions and situations that could be opportunities for self-efficacy source experiences or indicate a student's self-efficacy judgment (e.g., noting peer interactions that seemed conducive to vicarious learning experiences and student-teacher interactions that seemed conducive to social persuasion experiences). In student journal entries, the prompts were designed to elicit self-efficacy statements and self-efficacy source experiences. In interviews, the questions were largely drawn from protocols designed to elicit self-efficacy experiences (e.g., Zeldin and Pajares, 2000; Hutchison *et al.*, 2006).

For the specific case of Nicole, the types of data from which we draw are field notes on the classroom environments of her TYC and FYC and her journal reflections and interviews with her (See Figure 1). We will call data explicitly from Nicole or focused on Nicole "primary data" and other data that may be about surroundings relevant to Nicole "secondary data." We determine secondary data to be relevant to the narrative if it relates to primary data. For example, in an interview, Nicole might describe an experience in a class about which we also have field notes, so the secondary data in the field notes would be relevant to the primary data that Nicole discusses in the interview. Alternatively, secondary data might include another student's journal entries. Thus, journal entries and field notes are used as both primary and secondary data depending on the subject. In our analysis, we would then triangulate these data to arrive at a claim about Nicole's experience.

### Data Analysis: Narrative Inquiry

Given the kinds of data and their rich and longitudinal nature, as well as our strong research relationship with Nicole, we used narrative inquiry, or narrative analysis, to examine the data to tell Nicole's story of academic experiences throughout the process of transferring from a TYC to an FYC. As we argued in the *Literature Review*, we need more qualitative research with an in-depth analysis of the multifaceted transfer student experience. Narrative analysis allows us to provide this more in-depth analysis.

We chose to focus on Nicole for the narrative analysis in large part because of our own positionality as researchers. In our interview with Nicole just after she began attending Lake University, she mentioned her social anxiety and the ways that made it difficult for her to get to know peers and faculty at Lake University and feel a sense of belonging. We had specifically been paying attention to physiological state experiences of self-efficacy (the emotions and somatic influences of experiences) because of

L.A.H.W.'s positionality, and because that source of self-efficacy is less well developed and studied. Nicole's mention of social anxiety made her stand out as a candidate for a case study focused on physiological state. Using an in-progress codebook, we qualitatively coded primary data from Nicole (journal reflections from Spring 2019 and two interviews) for explicit statements of self-efficacy and descriptions of the self-efficacy source experiences. On a secondary analysis, we used a deductive process to examine physiological state experiences, coding for emotion words and descriptions of emotional and physical feelings and examining her body language in our interviews and our descriptions of her from field notes. Particularly, emotion words stood out from Nicole's journals during her River College research methods course, so we compiled a table of those data from journal entries (see Supplemental Table 1A). Throughout the weeks of that course, Nicole described difficult challenges she and Colette (her research partner) faced in their research project but generally remained positive, which she continually attributed to the course instructors.

Ultimately we felt that Nicole's narrative was about something broader than self-efficacy (see Supplemental Appendices D and E for more details), and we stepped back from that coding analysis and instead followed Clandinin *et al.*'s (2007) framework of narrative inquiry (although we will typically refer to it as narrative analysis). The framework has three "commonplaces"— temporality (or time), place, and sociality (See Supplemental Table 4A for referencing definitions). Note that sociality includes internal and external conditions and their interactions, so for a given person, sociality could include, for example, the person's mental health or estimation of personal abilities as well as the environmental factors of supportive or unsupportive peers and mentors, and the interactions between those internal and external states. According to Clandinin *et al.* (2007), while narrative inquiry does share characteristics with other types of qualitative inquiry, all three commonplaces must be examined for analysis to be narrative inquiry. Thus, the essential components of a narrative analysis are a story about people, places, and events that we view as "always in transition" (p. 23) through past, present, and future, as well as in personal and social conditions, and we, as narrative inquirers must examine "the impact of each place on the experience" (p. 23).

We also drew heavily from the example of Wickersham and Wang (2016) documenting the experience of women in the TYC. Wickersham and Wang used Clandinin *et al.*'s narrative analysis (2007, 2009) as well as Riessman's thematic analysis (2008), and additionally applied the five components of plot structure as analytic features, which are characters, setting, problem, actions, and resolution. Drawing from Clandinin *et al.*'s methodology and Wickersham and Wang's example of using the methodology, we combined the use of plot structure components and the three commonplaces in our analysis. We conceptualized the components of plot structure in terms of who, what, where, when, and why/how. This helped us think about the commonplaces in simpler terms— temporality as when; place as where; and sociality as why, how, and who (supporting characters). The story and research participant of focus in our case is then who (main character) and what. We then operationalized our application of the framework in the graph shown in Figure 2, thinking of each commonplace as an axis in a three-dimensional space.

We can see the complexity of the place axis by thinking about Nicole's River College research methods course classroom as one place in which we might tell her story. Experiences in that course did not just take place in the one classroom, though. They also took place in the computer lab, the river and creek, a professor's car on the way to the riverbed to collect water for the experiment, and more. Additionally, Nicole's story takes place in many more settings than just at River College or Lake University. While we do not have firsthand data observing her in other, nonacademic settings, in interviews she has discussed her family, friends, and roommates, as well as volunteering at the zoo and participating in clubs, some of which are sites she describes as academically relevant and some which are less relevant to our focus. While we might not be able to represent these places based on a firsthand account or in as much detail as others, these types of settings can be important points on the axis of place for Nicole.

Then, a coordinate on these axes we will call a "scene," in other words, some experience from the case study's narrative. For example, one scene for Nicole might be given by the coordinate (time = a class day in Spring semester 2019, place = classroom, sociality = Nicole works with her partner on their research project with a few other students in the room and one professor helping them use a machine for measuring pH of water). Sociality is harder to describe succinctly and to know precisely than time and place, making this graphical representation somewhat messy. The time axis is similarly complex. It consists of more points than just chronological time. For example, a coordinate on the time axis could be a day in Fall semester 2020 when Nicole is reflecting on an experience in Spring 2019 (like a flashback). This representation of narrative analysis does not result in brief three coordinate descriptions of complex scenes from a human's life, nor should it. Narrative inquiry is, by nature, the complex process of telling the story of some experiences from part of one's life. This representation of the framework as three-dimensional axes merely allows us to simplify and organize the analytic process.

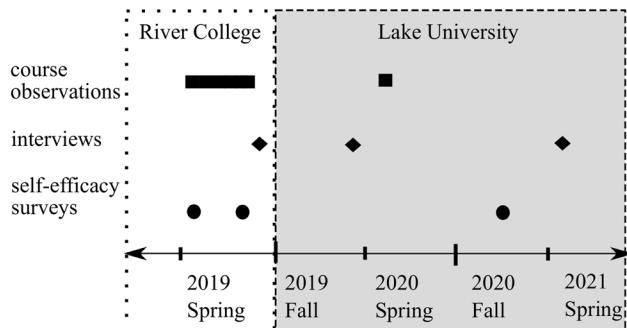
## RESULTS: (RE)CREATING COMMUNITY AFTER THE COMMUNITY COLLEGE

The themes we pulled out of our analysis of Nicole's story highlighted the importance of supporting characters in her experience at River College, Lake University, and in transitioning between them. We will describe how these supporting characters include her professors, her peers and classmates, and some advisors and staff at each institution. In this *Results* section, we will first introduce Nicole and the settings and supporting characters from the TYC and FYC. Then we will tell several short stories from our analysis of Nicole's data that illustrate this theme. Next, we will examine all the vignettes through the lens of the central theme of the role of supporting characters, and finally, we will discuss the physical settings and how they contributed to the scenes.

### Introducing Nicole

So, I have a lot of social anxiety. It's very hard for me to go up and talk to people.

—Nicole, Fall 2019



**FIGURE 1.** Data collection timeline. This chronological timeline displays the types of data we collected about Nicole, starting in Spring semester 2019 at River College through Spring 2021 at Lake University.

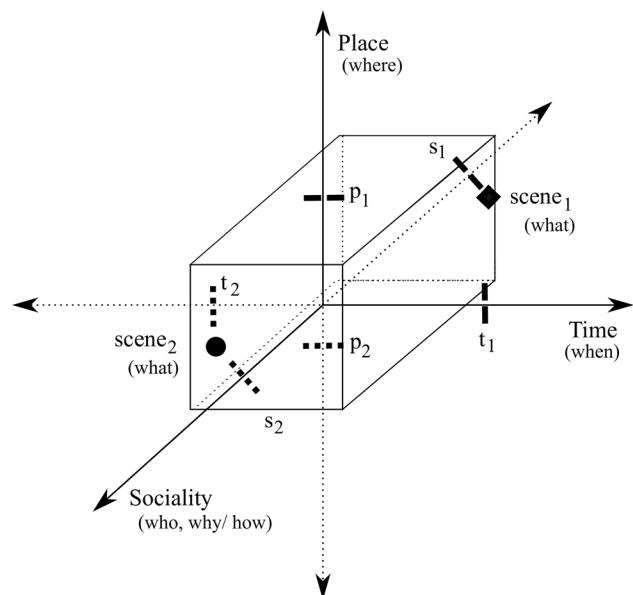
The main character in this story is Nicole (See Supplemental Table 2A for details on how we constructed this character introduction). Nicole is a transfer student who received her associate degree from River College, which is a TYC. Nicole is a white woman and of roughly “traditional” student age. She attended that TYC for 2 years before transferring to a large, in-state, research-intensive baccalaureate-granting institution, or an FYC, Lake University. She has since attended Lake University and intends to get her bachelor’s degree before possibly continuing onto veterinary school, maybe at the same university, or searching for jobs. River College has about 10,000 students enrolled, and Lake University has about 40,000 students. The two schools are located about 50 miles apart. At Lake University, she has been double majoring in integrated biology and zoology with a concentration in zoo and aquarium science.

We have interviewed Nicole three times (see Figure 1), first near the end of her time at River College (Spring 2019), second in her first year at Lake University (Fall 2019), and third in her second year at Lake University (Spring 2021). In our second interview with her, during her first year at Lake University (Fall 2019), Nicole said she has “always wanted to be a veterinarian since [she] was little.” She added,

Over at [River College] at the beginning of the [cohort] program there, we had to take a course over the summer.... [I]t 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.

For her, that means she decided to major in integrated biology, and she also said that at Lake University, she added a double major in zoology during her first semester, “since there’s a lot similar in the two.”

Nicole is a quiet young woman in her academic settings, tending to passively reside in the background of socializing scenes. A casual observer would likely notice her less than her peers, as her peers often said more or laughed more or were louder than she. She often wears comfortable clothing that many college students would wear, like gray sweatpants and black beanies, but added to the fact that she often keeps a dark-colored cold weather coat on, even indoors, her attire

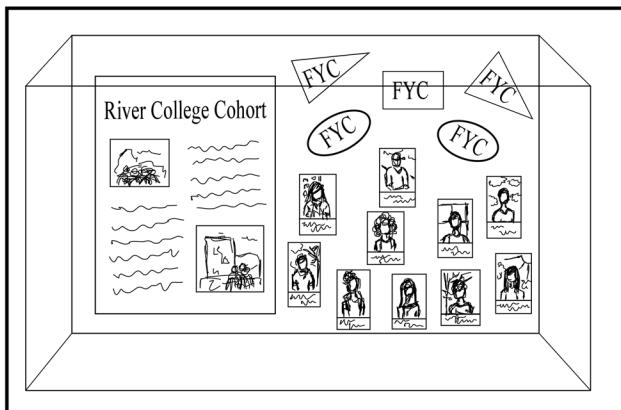


**FIGURE 2.** Narrative analysis graphical representation. This three-dimensional graph depicts how we conceptualize using narrative analysis. It features each of Clandinin *et al.*’s (2007) commonplaces as an axis.

aids in her coming across as shy and reserved. We have interacted with her several times over the past couple years. In our interviews, as well as in the daily observations, in addition to wearing subdued clothing, she held her body in a reserved way that suggested some shyness and possibly even discomfort in some situations. There was, in fact, a marked difference between her physiognomies in each of the three different settings in which we interviewed her, indicating her varied levels of comfort in the environments. For example, Nicole held her body in slightly more closed-off ways while we interviewed her at the FYC. She hunched over more, hid behind her hair, kept her jacket and hat on, and just seemed less comfortable in the space than she had at the TYC, where she held a more relaxed posture in her chair and kept her hair out of her face.

Our third and most recent interview with Nicole, which was during her second year at Lake University, was a virtual video call interview due to COVID-19. She was at her family’s home and seemed a bit more at ease being in that setting, although of course there were many factors affecting her experience throughout that time, including the difficulties and anxieties of virtual school and COVID-19.

While we only directly observed Nicole in academic spaces, we see again and again that Nicole has strong family ties and is influenced by her family. However, we also see that she is very independent in making academic and career decisions, and she largely attributes finding information to personal internet searches. For example, when asked how she decided she wanted to be a veterinarian, Nicole simply said, “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.” She added that she “pretty much” did a Google search for jobs that would fit her interests, as well as that there were “some career quizzes that sometimes [she]



**FIGURE 3.** River College Scholars cohort spotlight. In the hallway outside the River College Scholars methods classroom, there is a display highlighting the River College Scholars cohort and members. The drawings in this paper are adapted from L.A.H.W.'s observational field notes, photographs she took alongside the field notes, and her memory and personal experiences spending time at River College and Lake University.

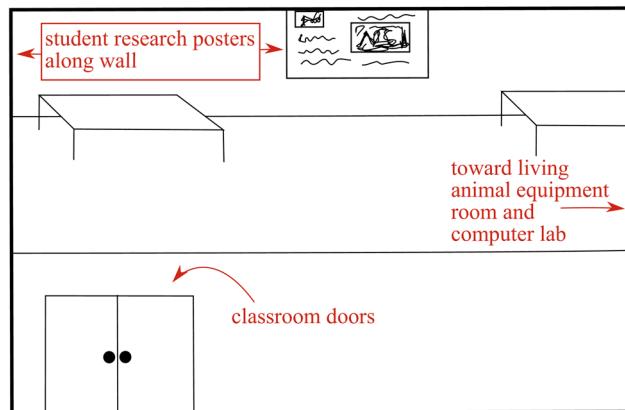
had to take for classes." We can also see that Nicole is quite driven and focused on her goals. We will continue to see this theme of a balance between helpful support structures and Nicole's own independence, resilience, and drive.

#### Data Overview

Right now, I'm like generally comfortable with you because I've been around you so often.

—Nicole, Spring 2021

As Clandinin *et al.* (2007) point out, "another dimension of the sociality commonplace [i]s the relationship between participant and inquirer" (p. 23). We first met Nicole while conducting a participant-observer study of a research methods course at River College. L.A.H.W. sat in on that class every week for 15 weeks. At the end of the semester, Nicole volunteered to participate in an interview with L.A.H.W. reflecting on her experiences. At the time this paper was written, Nicole was a student at Lake University in a natural science cohort program. This program requires transfer students to take a "sophomore seminar" course within their first year of enrolling in the university (See Supplemental Figure 2A for a drawing of the classroom). Nicole took the course in Spring semester of 2020. L.A.H.W. sat in to observe the class one time in that semester. L.A.H.W. had also observed the same class every week when it was offered the year before (when Nicole was not enrolled). Chatting casually with Nicole in various moments of that course felt natural and easy, despite both Nicole's and L.A.H.W.'s experiences with social anxiety. In short, over time, L.A.H.W. and Nicole developed a rapport, and we feel well prepared to share her story. The authors' relationship to these data of course colors our interpretations of the salient themes. However, we have a wealth of various data about Nicole in many different forms from which we triangulate our arguments (Creswell and Miller, 2000) (See Supplemental Table 3A for data excerpts detailing this process).



**FIGURE 4.** River College hallway outside methods classroom. The hallway outside the door to the River College Scholars methods classroom was a socially generative space for Nicole and her peers.

#### Introducing Settings and Supporting Characters

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.

—Nicole, Fall 2019

The narrative of Nicole's transfer experience largely exists in two temporal phases: her past experiences during her time attending River College and her present and ongoing experiences attending Lake University.

We began this section with a quote from Nicole discussing her perception of the differences when she transferred from River College to Lake University. She says that, at River College, "everything ... seemed more like high school." This could be interpreted from a deficit perspective to mean that TYCs might not be as rigorous as universities. However, taking an asset perspective, we could also interpret this to mean that TYCs can provide an easier transition out of high school, which is an important role.

#### River College and Cohort Program for Science Majors

Everyone was excited because I was [in] the first [class of the cohort program] to graduate from [River College].

—Nicole, Fall 2019

A story that stands out from River College and exemplifies much of what we know about Nicole's experience there is from her cohort's science research methods course. River College's cohort program, River College Scholars, in which Nicole participated, consists of advising and academic support, both for the students while at the TYC as well as with a focus on their intent to transfer, and supporting students in the transfer process to an FYC. Another aspect of the River College cohort program is a research methods course designed to give students research experience to both prepare them to be good candidates for transferring and to be successful in future scientific research experiences.

In the hallway of the science building at River College in which the research methods course is taught, there are pictures of the cohort students in groups and individually, with their names. Surrounding those cohort pictures, there are names and paraphernalia of in-state four-year universities to which the students will likely transfer (see Figure 3). Plus, part of the River College Scholars program includes local FYCs advertising to students, introducing them to the schools, and informing them of the transfer processes. In the research methods course, some days would include representatives from the various schools coming in to present about programs and opportunities.

The research methods course is one semester long and is offered in the Spring semester, with students meeting once a week for 2 hours. The course is small, and it is co-taught by multiple instructors. The 15 week course focused on teaching the scientific method; research skills like finding literature, writing literature reviews, and learning to use equipment; and completing a research project from hypothesis and procedure writing to a final poster. Most people in the class worked on their projects in self-selected pairs. Nicole and her partner compared fish growth in two types of water. In this course, students wrote journal entries one time each week as part of their course assignments.

The research methods course takes place in a standard small classroom with about 30 combined desk chairs facing a white board and a pull-down presentation screen with a podium off to one side. Often, the door to the classroom is locked before class time, and the students wait outside in the hallway until one of the instructors arrives and unlocks the door (See Figures 3 and 4). In the first half of the semester, the students would also sometimes head to the computer lab a few doors down the hallway. These three locations, the classroom, the hallway, and the computer lab, were the sites where students in the course most often had casual conversations among themselves (see Figures 4, 5 and 6). Except for a few of the students who seemed to be friends before and outside the course, everyone indicated in their journals that little time was spent working together outside class time.

In addition to the classroom, the hallway, and the computer lab, different research groups generally went to specific rooms in the science building to work on their projects. Once students had decided on their projects, a small room down the hallway from the classroom on the second floor and near the computer lab was designated as the living animals room (see Figure 7). This was where Nicole and her partner Colette typically worked on their project.

As a research team, we were generally impressed with the course throughout our observations. While the instructors had ideas about improvements they would like to make to the course, they remained upbeat and positive when communicating with students. The students, in turn, remained positive and optimistic in part because of the instructors' actions, expressly attributing their confidence to the instructors' teaching, skills, and expertise. The professors worked hard to mask their personal concerns in order to remain encouraging with the students. Nicole shared in her journals from Spring 2019 how she found the instructors instrumental to her success and to maintaining positive feelings about the course, saying:

This week, [my partner] and I talked with both [Professor 1] and [Professor 2] about our research project. We were having a difficult time coming up with a back-up idea in case we cannot work with fish. Both instructors agreed on how we can choose a certain amount of different heavy metals to test for in the water and do multiple samples throughout the river. 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.

Additionally, the research methods course instructors and other cohort faculty and staff made an impression on Nicole. She told us that she had not been planning on walking in her graduation ceremony from River College, as she did not consider graduation from a TYC to be a big deal, but cohort staff told her how excited they were for the first set of cohort students to graduate from the program, and it caused her to change her mind. While on the surface it might appear that attending a graduation ceremony might not be important, the encouragement that Nicole received to attend communicates that graduating from the TYC is an accomplishment to be proud of. This message seems especially important when considering the stigma students face pre- and posttransfer from TYCs.

### Lake University and Cohort Program FYC Counterpart

I have an older brother... 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.

—Nicole, Fall 2019

Nicole said that she did not think that graduating from an FYC was a big deal, and she was also not planning on attending the graduation ceremony there. It is significant that no one at Lake University has influenced her to change her mind in the way influential faculty and staff did at River College.

Similar to the River College cohort, the Lake University cohort program for transfer students is on the order of 10 students per academic year. However, Lake University's transfer student cohort is a small part of a recently expanded cohort program that has run for decades supporting first-generation college students and students of color. This program recently expanded to support transfer students and makes available all of the resources of the already existing cohort program. The transfer students have access to resources, including tutoring and homework help for various specific classes and subjects that many students in the cohort all take as part of their natural science majors; holistic advising on planning for graduation; support finding research positions, especially summer research positions; being placed in courses with other cohort students when possible; and cohort social events. There is no specific research methods course at Lake University, and there are no courses or environments that are reserved only for the transfer students in the cohort.

Analogous to the STEM research methods course at River College, another aspect of the Lake University cohort is a one-semester course for cohort students offered as a class for "freshmen" and "sophomores," and the sophomore version includes TYC transfer students (though it is not exclusive to transfer students). The course teaches professional development, study habits, how to find research positions, information

to consider for deciding on postgraduation plans, and more related skills.

### Vignettes That Illustrate Nicole's Narrative: The Role of Supporting Characters

The overarching story we tell about Nicole is that she was surrounded by impactful supporting characters while she attended River College, and this helped her be successful at River College and in the transition to and after transferring to Lake University. However, she then faced difficulties finding supporting characters at Lake University. In this section, we describe four vignettes from Nicole's story that highlight the role supporting characters play in her transfer story. First, we tell a story from Nicole's time at River College during which she took a research methods course and completed a partner research project. We show how the supporting characters of her instructors and partner mitigate challenges in the Nicole's pretransfer story. Second, we will recount Nicole's struggle to find academic peer groups at Lake University shortly after having transferred. Third, we will narrate Nicole's difficulty getting to know her professors at Lake University. We argue that the setting and sociality of Lake University make it difficult for Nicole to form connections that would lead to supporting characters in her transition. Finally, we will share the resolution to our story of Nicole in which she has found community at Lake University after spending more time there posttransfer.

### Nicole's Backstory: Partner Project Researching Fish at River College

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.

—Nicole, Spring 2019

The students in River College's research methods course completed a research project with a partner in the last half of the class. In this section, we share the overview of that successful project (from Nicole's perspective), and we highlight the role Nicole's partner, Colette, and Nicole's instructors played in Nicole's narrative. In this vignette, we draw from the primary data of interview 1 and Nicole's journals from the River College research methods course. We then fill out the details of the story by triangulating with secondary data from the field notes and Colette's journal entries. (See Appendices D and E for more information on how this vignette was constructed.)

A little less than halfway into the semester, and a few weeks before spring break, the students had formed their research project groups, and Nicole had settled on a partner. They had both wanted to work with living animals, particularly fish, and they easily settled on the research project of comparing fish growth and health in two different living environments. There had been several weeks of class mostly consisting of lectures on the scientific method and so on, and partly due to inclement weather and unforeseen setbacks, the students did not begin their research projects until halfway through the semester. Thus, around spring break, Nicole and her partner planned to measure the growth of yellow perch, but before the semester

ended, they would face many unexpected changes to their project.

A pivotal first step in acquiring the materials needed for their project was gathering the river water to be used in one of the fish tanks. One of the instructors took his car out to get water in buckets from the river with Nicole and her partner as well as another group who were going to use water in their project. This was outside class time, maybe after a class one Thursday. Apparently, no one had a specific spot in mind to park and make it down to the river to get water, so they ran out of time for some reason and were pushed back again a few more days in being ready to begin the experiment.

They also needed to acquire fish for their experiment. Nicole was not there when her partner Colette went to buy the fish from the store, so she does not know how exactly this turn of events happened. Somehow, the yellow perch were not available, and Colette instead bought perch minnows. These fish are apparently just common baitfish, and there is little information available regarding these fish. Whereas Nicole and her partner were prepared with the necessary growth charts to be able to compare their fishes' growth rates to an external standard for yellow perch, there was no such information available for the baitfish they ended up having to use.

By the time Nicole and her partner did have their materials and equipment gathered and set up, there were only about 3 weeks left in the semester in which they could collect and analyze data and prepare their final presentation. Additionally, Nicole and her partner were not even able to do the data collection or analysis they had planned. They had intended to use a specific tool to test for heavy metals in the river water, which they hypothesized might impact the fishes' health. Nicole expressed to us in our interview that they had been told by the instructors that a local FYC satellite campus was going to let students in the course use a piece of equipment they had available for testing heavy metals; however, according to Nicole, they changed their mind and did not share access to the tool.

If that was not enough, Nicole's partner, who worked in a pet store and seemed quite confident in her knowledge of animals, noticed the fish developed a sickness called ich partway into their experiment. In the few weeks they actually could collect data, around half of their fish died due to ich, which was likely from the pet shop rather than anything about their experiment.

Looking at all the difficulties Nicole and her partner faced in completing the research project, it is astonishing that they were not expressing more stress or annoyance throughout the project. Nicole remained fairly calm and optimistic, as we can see throughout her journals, and this was mostly due to the influences of supporting characters—the professors and Nicole's project partner.

***Addressing Sociality: Instructors as Influential Supporting Characters for Nicole.*** Throughout this difficult and potentially stressful experience, Nicole's journals and demeanor remained fairly positive. She frequently attributed her positive attitude to the instructors, as she often talked about them and their impact on her project work throughout the course. Nicole never wrote about being stressed or anxious in her journals, despite saying that she was stressed about the time frame when asked in our interview at the end of the semester. What she does talk about in the 4 weeks of journals surrounding data

collection is generally positive. At one point, she says she is proud of having the fish and both tanks prepared, and she says that she would “normally be frustrated about feeling behind but she is not frustrated about anything because the professors talked about students being able to continue their research into the next semester.” In her last journal, she said she was proud that they “completed their experiment and created a decently good poster,” but she was “frustrated that [they] never really had a lot of time to work on their project outside of class.” She wrote that she was most proud that not all of their fish died. Overall, she remained optimistic.

The instructors of the research methods course were very supportive in helping the students get what they needed for their projects, while also allowing students a lot of freedom in decisions and maintaining the students’ control and agency over the projects. One of the instructors took two project groups in his car to get water from the local river for their projects. This was outside class time, and when they ran into issues finding a point at which to gather the water, they had to go back out on another day.

Nicole wrote in her journal, “I was hoping that by this Thursday we would have everything we need to finally get the fish in the tanks. 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 ... I feel pretty confident with our ability of getting it and preparing it for the fish.”

This experience of gathering materials outside class time with a professor and other students in a professor’s car is a temporal and spatial location that impacted Nicole’s sense of community and feeling of being supported. Obviously, the instructors put a lot of energy, time, and work into making the course successful and a positive experience. We can see evidence that such experiences helped strengthen the student–teacher relationships, as well as improve the trust Nicole has in the instructors and enhance her experiences in the course.

**Addressing Sociality: Nicole’s Research Partner Colette Is Another Supporting Character.** Nicole’s research project partner also had a big impact on her during the class. She did not know her partner before this project and found her project partner in what appears to be an almost accidental way. In our Spring 2019 interview with her, Nicole said:

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.

Thus, sometime in the hallway waiting for the professors to open the doors and start class, Nicole easily and naturally found a successful project group. This time before class started and the place of the hallway outside the classroom were critical settings to Nicole finding the supporting character of Colette. Nicole frequently discusses that it was easier for her to find a community at River College because of its smaller size, but this is not the only relevant factor. The space and time of casual chatting in the hallway outside the classroom before class started was

essential to making River College feel smaller, and similar settings could be implemented at any institution of any size. We will address this in more detail in the section *Comparing the Physical Settings* and in the *Discussion*. Colette seemed to be an outgoing extrovert, ready to talk to anyone around her and share her thoughts and talk about her experiences. She often talked about her love of and experience with animals, particularly that she was working in a pet shop. L.A.H.W. wrote the following in field notes early in the semester.

Professor giving example of using aquarium for fish, need all variables about aquariums controlled, [Colette] supplying terminology like “bubbler;” very confident person, seems to have background working in aquariums or zoos or with fish.

Colette’s experience also seemed to impact Nicole’s perceptions of her partner, as Nicole wrote in her journal:

As we were preparing the tanks, [Colette] showed me what to do for the tank containing the river water as she was preparing the one with the distilled water. I helped put in the filters, air pumps, and the natural hides into the tanks. 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.

Throughout the project, Nicole’s partner showed Nicole how to do a lot of things and shouldered a lot of the work that directly involved the fish. Elsewhere in her journals, Nicole mentions wishing she “could help out more with the fish” but being “too afraid of hurting them.” Colette helped Nicole a lot with being and feeling successful in their project.

**Plot Resolution at River College: Supporting Characters Help Mitigate Challenges.** The research methods class is an academic experience for Nicole, but we can also see that it was an experience that provided many supporting characters in Nicole’s science student narrative. The sociality and place of this setting from Nicole’s past were very conducive to a supportive environment. This helped Nicole have a fairly easy time getting to know her professors and her peers even as a person who deals with social anxiety. As we saw in the *Literature Review*, academic integration supports social integration, so the class helping Nicole feel comfortable with her professors and peers is tied to her overall sense of belonging at the institution. Thus, the temporality of her time as a community college student and the place of this cohort-based research methods course intersect with the sociality of supporting characters to support Nicole through successful transfer and in her subsequent time at Lake University. Institutions can learn from this story how to support similar students who might need additional support to find community and feel a sense of belonging.

### **Story Conflict: Unhelpful Assigned Groups at Lake University**

After talking with Nicole at Lake University, one element that emerges about Nicole’s changing narrative is the difficulty in finding supporting characters for her continued science student narrative. Nicole, in her own words, relates finding study groups of peers and classmates to a sense of belonging at a school. She also describes herself as having social anxiety, which is another

factor influencing her achieving a sense of belonging. This means she faces a unique type of challenge in integrating as a transfer student into an FYC.

In our second interview with Nicole in Fall 2019 (after her first semester at Lake University), we asked her to elaborate on how she found study groups easily at River College but has struggled to find study groups at Lake University. Nicole's response was,

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.... 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 [group] with them when they don't seem to care as much as me [chuckles] ... So, I have a lot of social anxiety. It's very hard for me to go up and talk to people.

In this excerpt, we see Nicole was satisfied with group work at her TYC, which is confirmed by our evidence of her working well with her partner on a group project at River College (see Nicole's Backstory). In contrast, Nicole is saying that she is having difficulty finding successful study groups or working well with the groups in which she has been placed at Lake University. Having assigned groups at Lake University is an interesting distinction as well, because she found her study groups at her TYC organically without the groups being assigned. For example, she described finding her research partner at River College by just overhearing her saying she was also looking for a partner and jumping in. On the other hand, Nicole's FYC instructors have placed her in some study groups, rather than letting students choose their own. It could seem like, especially at a bigger school like Lake University with courses regularly four or more times the size of those at River College, assigning study groups could mitigate issues faced by students with social anxiety. However, for Nicole, it is not working as well as her groups at River College. This is partly due to the fact, as Nicole says, that River College is smaller, and it is easier for a person with social anxiety to navigate smaller groups of people.

However, the size of the institution does not explain all of the difference, although Nicole frequently emphasizes the size as being a big factor for her. In addition to the size difference, in the excerpt shared, Nicole says that she perceives a difference in the type of person at River College and Lake University. She perceives her group partners at Lake University as not caring as much about the projects and not putting in as much work, so she thinks of herself as caring more about doing well at the FYC than her peers.

Nicole continues in this same interview to make distinctions between her perception of her peers at the TYC and FYC, saying, "I know over at [River College], since it was only two years and the classes are definitely easier there than they are here, I can see people being more difficult with themselves and putting more stress on getting a better grade."

This quote shows us that Nicole thinks that these differences between her peers are in part due to the disparate structures of

the classes and maybe some of the different attitudes toward the two types of institutions. While the size of an institution is not a factor that can be easily changed, addressing those structural differences of courses and attitudes toward course work at the institutional level could ease the process of finding a sense of belonging for Nicole.

### The Plot Thickens: Difficulty Getting to Know Professors at Lake University

Nicole also faces difficulties getting to know her professors, something that she struggled with less at River College. We asked Nicole about people besides her peers encouraging or discouraging her. In answer, Nicole told us,

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.... I keep hearing from professors a lot that it's very difficult to get into the vet program.

We asked which professors she was "hearing from," and she described hearing it was difficult to get into the vet program from some Lake University professors, even though she had just said she struggled to talk with those professors. She reflected, "There's been a couple of cases where I have [talked to FYC professors]. But not in detail on trying to get help for my classes and getting to know them a little on a more personal level."

Despite the fact that she acknowledges differences in the encouragement of her professors and the extent to which she has gotten to know them, Nicole does not say she sees this as a big issue at Lake University. We asked if she considers hearing that it is difficult to get into a veterinary program encouraging, discouraging, or neutral. She said, "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]." Nicole went from a supportive, actively encouraging environment at River College, where she knew her professors well and was comfortable with them, to a neutral environment at Lake University, where it was difficult for her to find a sense of belonging and her social anxiety was exacerbated.

It is not surprising that Nicole seems unperturbed by what she has heard from her professors at Lake University, because throughout our interviews she tended to take the responsibility for difficulties before blaming any external factor. For example, she said she had not made the time to talk to her professors at Lake University. We as researchers would choose to interpret this a little differently from Nicole and ask what institutions could do to improve Nicole's experience. Particularly, what is different about the FYC experience that Nicole does not have the same time available to make connections with professors that she had at the TYC? Nicole's narrative shows us that the sociality and physical places of Lake University are less conducive to forming connections with her FYC professors than the settings of River College (See the *Discussion* for suggestions of what an FYC might learn from the River College settings that provided Nicole with good support).

### **Resolution: After More Than a Year Nicole Has Found Community at Lake University**

All these pieces of Nicole's story may paint a picture that she struggled after transferring to her Lake University, but she had settled in a lot more when we interviewed her in the Spring semester of her second year. She had found friends in her peers and was an officer in an academic club as well as happily working at the zoo. She also described a professor she liked and from whom she had taken multiple classes. However, most of her classes have been largely online since the start of the COVID-19 pandemic, having gone virtual around halfway through the Spring semester of her first year on campus. It had been quite difficult for many professors to maintain a student community in online classes, and Nicole's experience had been no different. She told us that, although she was comfortable with us interviewing her over a video call because she has been around us so often, she struggled a lot with her social anxiety meeting and interacting with people in virtual spaces. The elements professors have tried to implement to maintain student community, like online group chats or discussion boards, felt mandatory and not very engaging to Nicole. This is notably a similar experience to what she described earlier about assigned class groups not working well for her.

We asked her if there had been any changes to her finding community and overcoming social anxiety in the year of time she spent at Lake University. She told us,

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

Despite this initial discussion of not knowing many people very well at her FYC, Nicole does later in the interview say that she has found a professor whom she is getting to know. Nicole related,

It's just been basically getting to know them through their classes more so than anything else ... My professor for, I believe it was biology of birds, I got to kind of know all of the work she does ... She does a lot of, like, citizen science where she goes out and does e-birding and stuff. Which I think is really cool. Actually, I think that class also kind of got me into birding as well now. 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 [name].

We were glad to hear that Nicole had found some supporting characters at Lake University as she had at River College, particularly professors. However, Nicole does talk about this professor substantially differently than any professors at the TYC. Notice that most of the quote she discusses knowing what that professor does rather than the professor knowing about Nicole. Although Nicole says she has been "getting to know [her professors] through their classes," she goes on to only talk about what she thinks is cool about the professor's science and the hobby

the professor inspired her to start. She only describes a one-directional interaction in which she admires aspects of her professor, but the professor does not necessarily know about Nicole. She has not told us about any more bidirectional interactions or even a conversation she has had with this professor, in contrast to the casual, conversational interactions she described with River College professors. She also struggles with even remembering the professor's name, so the relationship appears less impactful than her connections with the instructors at River College.

As we saw before, Nicole continues to mainly attribute social difficulties at Lake University to the larger size compared with River College. She said, in the Spring 2021 interview,

I would say it's definitely harder to get to know professors here compared with 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 [at River College]. Because I'm sure it's very difficult when they have a class of like 500 people to even remember your name, you know?

We checked with her on whether she thought the biggest reason getting to know professors was harder at Lake University was just the size of the school, and she said yes. However, she also mentioned other factors, and we stress that factors besides the size of a school that are changeable should be improved in order to more effectively support transfer students at FYCs.

Nicole also mentioned a friend with whom she had gotten close, who encouraged Nicole to become a part of an academic club, in which Nicole has since become an officer. We had the following interaction with Nicole:

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.

Again, it is great that Nicole has become socially involved with Lake University clubs and has made friends associated with the club and her academic interests. It took a while in the interview to get Nicole talking about those experiences and people, though, so it seems that negative feelings and lack of connections are more present in her mind when talking about her Lake University experiences.

### **Theme of Salient Impact of Supporting Characters**

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.

—Nicole, Fall 2019

Nicole and her research partner faced a number of challenges in completing their project in the River College research methods class, but the story we developed from Nicole's data shows that the supporting characters of her peers and her instructors made it an overall positive experience. Comparing

this with Nicole's experience at Lake University, we see that it took more than a year for Nicole to start identifying supporting characters. Furthermore, there were substantial differences in the way she talked about them at the two different institutions, contributing to her feeling a lower sense of belonging at the FYC.

We can see throughout Nicole's interviews, journals, and surveys that the research methods course and cohort program at River College were very impactful to her. We have frequently seen Nicole contrast the difficulty of getting to know her peers and professors at Lake University to the ease of getting to know people at River College. Specifically, in our second interview with Nicole, she talked about not having planned to walk in graduation from River College. She said this was because her brother had also graduated from River College and had not made a big deal out of graduation. However, she did walk in graduation because faculty and administrators of the River College Scholars program told her how excited they were for her cohort, the first cohort of the program, to be graduating.

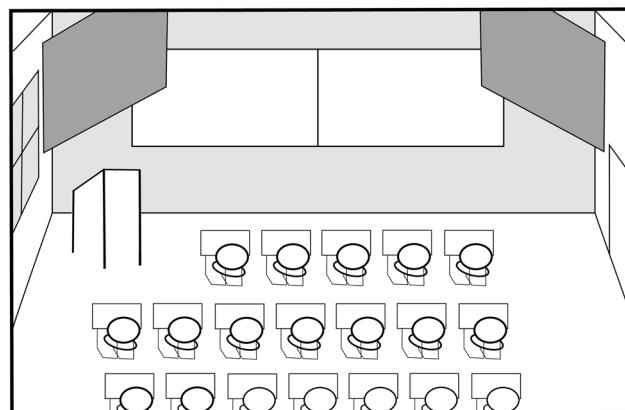
Important supporting characters in this experience include the three professors, her research partner, and her other classmates. Nicole describes working most closely with two of the professors, because they "were looking at more animal biology and some chemistry." Nicole also knew those two professors before the course, and although she had not met the third before, she had him for another class simultaneously with the research methods course. While at River College, she says,

I knew [Professor 1]. 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 [Professor 2] 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 [Professor 3] before that class.... It was very helpful to also get to know [Professor 3] 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.

On the other hand, Nicole described difficulty finding peer groups and community at Lake University. We see a marked difference between how Nicole talks about those professors at River College from how she talks about a professor at Lake University whom she considers she has gotten to know after a year and a half at the FYC. She struggles to remember that professor's name and talks much more one-sidedly about knowing what that professor does rather than the professor knowing Nicole well or having a connection with Nicole. Other than that specific professor, Nicole told us that she has not "been able to talk to any of [her] professors," and she attributes this to not having "made the time" or found the time. At Lake University, Nicole seems to think it is her responsibility alone to get to know her professors, whereas her River College professors made the space to get to know their students.

### Comparing the Physical Settings

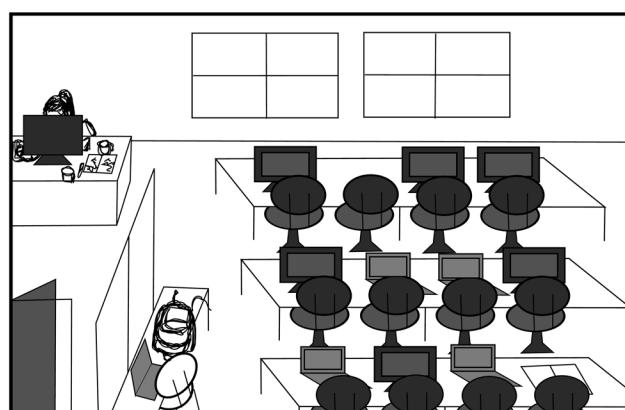
In this section, we narrow in to focus on Clandinin *et al.*'s (2007, 2009) narrative inquiry element of place. Looking at the sketches of the environments above in the section Settings and Characters and throughout the vignettes in the *Results* section,



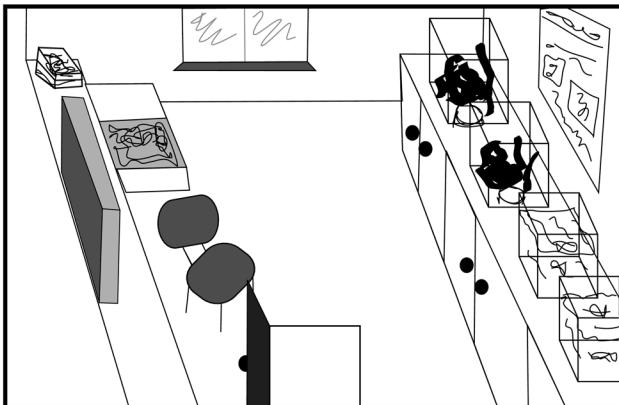
**FIGURE 5.** River College methods course classroom. This drawing depicts the River College Scholars methods course classroom. Notice the small size and the personal style of desks.

we see differences in the physical setups of River College and Lake University. Nicole talks a lot about the size difference between the two institutions, but along with a size difference comes a difference in the physical environments that might exacerbate the feeling that a school is significantly larger. Notice that the classroom and the computer lab at the TYC are small (Figures 5 and 6). There were about 40 combined desk chairs in the classroom and about 25 chairs in the computer lab, most of which were at computers, but some of which were at empty spaces at the tables where students could work on their personal laptops. When the methods class and instructors went to the computer lab, the students would take up about two of the four rows of tables in the room (See Figure 7 and Supplemental Figure 1A for more classroom settings at River College).

In the classroom, there was an overhead projector for using transparencies on the podium or table in the front of the classroom. Because this was something L.A.H.W. had not seen since high school, it added to the feeling that River College felt more like a high school than many FYCs. This was also due to the smaller size of River College in terms of number of students, as



**FIGURE 6.** River College computer lab. Early in the semester of the methods course, the class would sometimes travel to the computer lab to work on the initial stages of their projects (e.g., collecting articles for literature review).

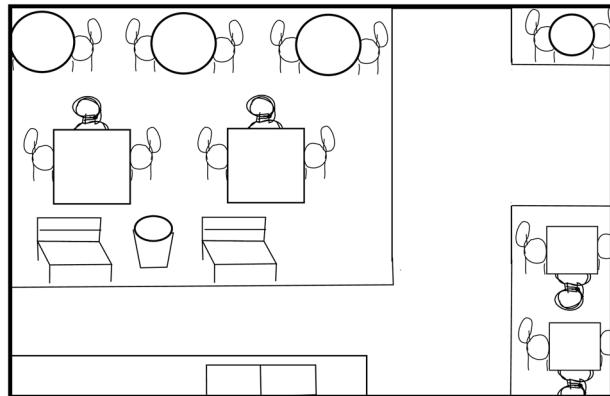


**FIGURE 7.** River College living animals research equipment room. This small room seemed to have been a storage closet of some kind before being used as the equipment room for the groups of students in the methods class who were conducting research projects with living animals.

well as the size of buildings, and the close, inexpensive, and pay-per-use (rather than prepaid or reserved) parking near the campus buildings. The space outside the classroom was a small hallway with some benches scattered throughout and some posters on the walls. The hallway was never very full or packed with people; even at its fullest, there was plenty of walking space.

On the other hand, a typical lecture hall at Lake University has on the order of 100 or more seats and they are either the kind of chairs with a tiny desk that can be pulled up from the side or just several long tables with about 10 to 20 chairs at each table (see Figure 8). The spaces outside these classrooms are much bigger than at River College, but also generally more packed with people (see Figure 9). When classes have just let out or students are waiting in line at a vending machine or convenience market or students are waiting to be let into class to take an exam or get their exam grades back, hallways can be packed, with little room to move.

While it was hard to *not* sit in the front two rows in the classroom of Nicole's STEM research methods course at River Col-



**FIGURE 9.** Lake University hallway outside the lecture hall. This drawing depicts an example of a hallway outside a lecture hall at Lake University. Although the hallway is bigger than the hallway at River College, it would also typically be much more crowded with students.

lege, it is very difficult to sit in the front two rows in a classroom at Lake University. Additionally, although it is an unchangeable aspect of a large university, parking and buildings are farther from each other, making it take longer for students to get to different places on campus and making the FYC campus much more intimidating to new transfer students from smaller TYCs.

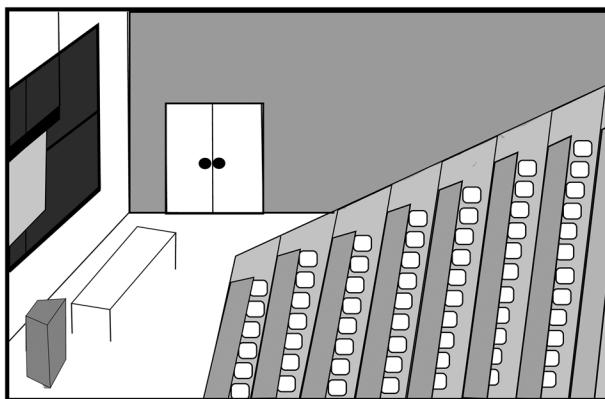
## DISCUSSION

### Discussion and Implications

In the *Literature Review*, we highlighted that, rather than position TYC students as struggling in the transfer process, we should work to use anti-deficit framing that interrogates how capable students might fail within our academic systems. This is important in general, and especially when discussing a woman's experience in STEM, where women are historically underrepresented; discussing that woman's social anxiety and physiological experiences; and discussing vertical transfer and TYC experiences, which can be stigmatized or overlooked in research. Narrative analysis aligned well with this anti-deficit framing, providing a lens to examine the settings (through the three commonplaces) that supported or hindered Nicole. Throughout the paper, we have described challenges Nicole faced in terms of institutional responsibility. We have also focused on the importance of supporting characters in Nicole's story and highlighted Nicole's strengths and positive experiences. We particularly narrate Nicole's story as involving many positive experiences and environments while at River College. In this section, we discuss what a school like Lake University could learn from River College to better welcome transfer students like Nicole.

### Institutional Responsibility: Place and Sociality's Role in Creating Supporting Characters

In this section, we continue to focus on institutional responsibility and aim to suggest ways institutions might address the types of challenges we saw Nicole face and implement the types of supports that helped Nicole. From Nicole, we learn that she feels less of a sense of belonging at Lake University than she did at River College, which she again and again attributes to the



**FIGURE 8.** Lake University lecture hall. This drawing depicts an example of a lecture hall at Lake University. Notice the large size and the shared desk style.

overwhelmingly larger size of the FYC. However, the size of an institution is a factor we cannot change, so we will discuss what could be changed at FYCs to ease the transition for Nicole and other TYC students. Nicole describes more difficulty in getting to know her peers and finding study groups at Lake University than at River College. Nicole attributes this difficulty as being due to both the larger size of Lake University and the difficulty finding the time to get to know many of her professors. Yet we know that Nicole got to know many professors at River College well, which we see in the research methods course, even though she spent little time interacting with them each week. Therefore, we argue that, even though Nicole assumes the responsibility for getting to know her professors at Lake University, this is not solely her responsibility, and the physical place settings and sociality of the environments have a big impact on students' chances to feel comfortable with their professors. Nicole gives us some clues in this direction—at River College she described feeling more comfortable with those instructors from whom she took multiple classes. Similarly, she describes getting to know an instructor at Lake University whom she has had for multiple classes, although she still seems to be less close with that professor than those at River College.

The literature supports Nicole's experiences suggesting that when faculty are more approachable, transfer students are more successful (Laanan, 2007) and that social integration into the university is led by academic integration (Braxton *et al.*, 2000; Deil-Amen, 2011). As Townsend and Wilson (2006) found that FYC social integration efforts may support FTIAC students native to the institution more than transfer students and may be opposed to efforts necessary to integrate transfer students, it is important to consider what can be done differently. We should note here that, while Lake University is larger, it is also true that Lake University has bigger classes, which would make it harder for professors to get to know their students. Additionally, the River College methods class instructors put in a large amount of work to support and encourage their students. Still, we ask how FYC faculty might support academic and social integration for transfer students.

**Specialized Programs Are a Site for Supporting Characters**  
As we see in Nicole's story and in the literature (Urias *et al.*, 2016; Nunez and Yoshimi, 2017; Marco-Bujosa *et al.*, 2021), people, more than programs, are impactful to students' experiences. Yet specialized programs like clubs with academic and recreational focuses can help get students connected to the right people and involved in smaller groups of peers, where it may be easier for them to find friends and feel they belong at the school. Although the size of an institution is an immutable trait, there are ways the physical settings of a larger school can be altered to make the school feel smaller and more personal. Among these possibilities are more teachers assigned to a course, such that large lecture courses could be split up into smaller groups (as in learning assistant classrooms; e.g., Otero *et al.*, 2010), and more active-learning setups with students sitting at smaller tables more conducive to discussion and group work rather than large lecture halls with fixed seating (Braxton *et al.*, 2000; Wang *et al.*, 2017). There are other ways that large FYCs could be even more creative with making spaces and opportunities for students to feel they are part of smaller communities and areas. Perhaps classrooms could be open for stu-

dent use when they are not actively being used for teaching a class (e.g., see the "Physics Learning Center" in Sawtelle *et al.*, 2012). This informal access could provide more spaces for students to hang out and work together that would supplement the non-classroom areas in buildings on campus that get very full between class periods (see Figure 9 as compared with Figure 4).

Being a part of a smaller cohort program might also help, providing smaller spaces and smaller groups of students. We saw the River College Scholars program provided Nicole with influential experiences to build relationships. For example, we saw Nicole change her mind about the experience of walking in graduation and celebrating that accomplishment because of the impact of cohort administrators. Cohort programs like this, and at larger FYCs or other institutions, could help the setting feel smaller by putting students into smaller groups in which it could be easier to get to know their peers as well as the administrators and faculty associated with the cohort. Such programs would typically group students with some shared trait or interest. Nicole is in a cohort program at Lake University for transfer students from TYCs, and such programs can help with something as simple as making the number of transfer students in a program more visible to other transfer students.

### Sociality Can Provide Opportunities to Get to Know Peers

We have seen in our discussions with students (Wood *et al.*, 2019) and we see in the literature (e.g., Townsend and Wilson, 2006; Deil-Amen, 2011; Lester *et al.*, 2013) that transfer students upon entering the receiving institution can feel that their peers all already know one another and are already set in their social groups. Sometimes, just making the transfer students at the institution visible to each other could improve their experience (Laanan *et al.*, 2010). To this end, an orientation for new transfer students at the receiving institution could also help. Related to the differences in size between the institutions, Nicole also faced issues with assigned groups in classes at Lake University. She found that these did not work, and she did not think she had an easy time finding her own peer groups and study groups. So Nicole and presumably other transfer students might benefit from support in both assigned groups and/or finding their own community from which to choose their own groups. This could also be aided by higher numbers of teachers allowing for early implementation of smaller groups of students led and taught by a teacher (on the order of 20–50 students rather than hundreds). Then students could get to know some of their peers more easily and closely and could choose their own groups going forward, which might work better than assigned groups.

### Limitations and Future Work

In this paper, we begin to address the idea of supporting characters' effect on a student's academic and scientific self-efficacy. This unique approach to self-efficacy using narrative inquiry aligns well with vicarious learning and social persuasion types of contributing experiences for self-efficacy, as we know that other people are impactful to a person's self-efficacy judgments. Still, work remains to research the nuances of supporting characters' influence, looking specifically at questions of what types of people and relationships lead to the biggest impacts, and how to foster such impactful relationships for transfer students.

In future studies, we would ask more specific questions to pull out additional factors besides size to know exactly what to improve at FYCs for transfer students from TYCs. This would allow more design of research and interventions to work on factors that are changeable. While the ideas presented in this *Discussion* address the feelings of a difference in size that Nicole expressed, they do not explicitly target the sense of belonging Nicole wished for and said she was missing at Lake University. There is a need for more research into this experience, as well as more ideas for how to make transfer students feel a greater sense of belonging and find more community at receiving institutions.

Additionally, while we share here the story of just one student, this experience is representative of those from many students with whom we have spoken. There is more work to be done to continue to share and explore the experiences of transfer students at TYCs and FYCs, but this qualitative narrative analysis of Nicole's story opens the door to many new questions.

## CONCLUSION

We used narrative inquiry to explore and tell Nicole's story of her experiences through and after a TYC to FYC transfer process. From this story, it is evident that Nicole found it a little harder to socially integrate into the FYC, which she generally attributed to the size, but other aspects could be altered to help Nicole and other students find community at their receiving institutions.

Our work contributes to the body of literature calling for more work with women STEM students at TYCs and following their stories after transfer. We specifically shared a qualitative case study following a student longitudinally before, during, and after her transfer from a TYC to an FYC. We strove to share this student's story using anti-deficit framing, calling attention to the institutional changes that should be made to better support Nicole's transition and the transition for other students like her.

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