Immersed in Mentoring: A Case Study of Developmental Networks in an Online Research Lab

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Introduction

Online courses are increasingly offered in higher education due to student demand for online accessibility. While prolific, the online format has some glaring shortcomings such as failing to create a sense of community (Song, Singleton, Hill, & Koh, 2004) due to the lack of social interaction (Kreijns, Kirschner, & Jochems, 2003), as well as failing to offer research opportunities. In a conventional face-to-face course setting, traditional and peer mentoring are shown to positively impact student engagement and success in higher education (Kahu, 2013). Additionally, mentoring provides students with the emotional and academic support they need to graduate (Holt & Lopez, 2014). However, there has been considerably less research on online mentoring and its utility in distance and online learning. As the need for online courses increases, it is important to understand several aspects of mentoring in this format. We must answer questions such as: (1) Can universities and colleges promote effective traditional mentoring between students and professors in addition to online peer mentoring among students; and (2) Can they encourage the formation of developmental networks that are critical to an individual's personal, educational, and professional development via online mentoring?

This case study took place at the University of Arizona South (UAS), which is significantly different from a typical undergraduate research university. UAS is a branch campus of the University of Arizona with locations in Nogales, Douglas, and Sierra Vista, Arizona. UAS is a two-year University program commonly called a '2+2' program, wherein students who have completed two years at a community college transfer to UAS to complete a bachelor of applied science degree. UAS is a Hispanic Serving Institution (HSI), and many students are nontraditional students who are dealing with competing demands such as work, home, family, and school (National Center for Education Statistics, 2017a). Most courses offered at the UAS are delivered in an online format. UAS' mission (2017) is to offer programs that prepare students for immediate employment, enable students to advance their careers, or help students transition into new career fields which meet the demands of the workforce along the border region. Given the target goals of the UAS, along with the online format, research opportunities are limited at best.

In 2015, Dr. Laura Lunsford, the Psychology Program Director, and Dr. Brandy A. Brown, the Organizational Leadership Program Director, bridged the research opportunity gap in the online environment by founding an interdisciplinary undergraduate online research lab: the Mentoring and

Leadership Collaboratory (MLC). The mission of the lab was to introduce undergraduate students to research, promote students' personal, professional, and academic development, and encourage collaboration between faculty and students via leadership and mentoring. The directors recruited student research assistants from their programs by e-mailing invitations to the entire program directory, in addition to inviting students who expressed an interest in research work. For the semester described in this paper, Spring 2016, the lab included seven active student members.

Christina Kalel was the lab's first undergraduate student coordinator in the Spring of 2016. As lab coordinator, Christina was responsible for managing the lab's website content, tracking student projects and progress, coordinating meeting times, and administering weekly meetings. More importantly, Christina served as a peer mentor to the other research assistants. In addition to the lab coordinator role, she continued to work as a research assistant on an ongoing research project focused on identifying high-quality mentoring characteristics. Throughout the semester, Christina formally mentored a new research assistant, Jessala Grijalva, through another formal preceptorship mentoring program that required a weekly interaction (see Figure 1). The formal mentoring program was created to provide additional support to students transferring from community college. Jessala had previously expressed an interest in more collegial engagement to Dr. Brandy A. Brown, who invited Jessala to join the lab as a way to connect with other like-minded students.

In this paper, we explore the impacts of both face-to-face traditional mentoring as well as online and peer mentoring on the members of the lab, especially Christina and Jessala. The strong and lasting developmental network that was formed during the semester is described by all participants, as are the methods used to mentor effectively online. This case study shows a successful conjunction of both peer and faculty mentoring to increase the success of the protégés, and offers methods for successfully mentoring underrepresented students, in non-traditional environments. This scaffold mentoring model can be used to plan or revise other models for supporting underrepresented students.
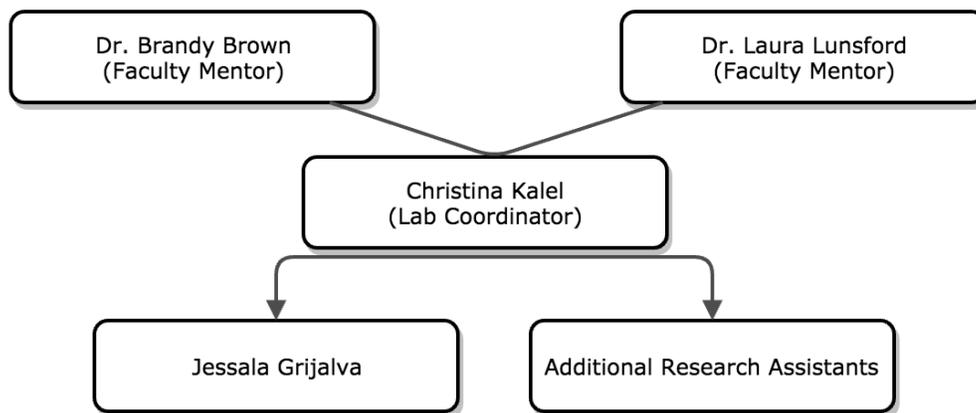
Figure 1
Mentor protégé relationships in the MLC.

Literature
Mentoring is essential to higher education, especially when combined with research experiences. In college, mentoring is used as a tool to support students who are transitioning into the research environment, to reduce attrition and improve academic outcomes (Bauer & Bennett, 2003; Cole & Espinoza, 2008). Besides increasing the success of students in the academic sphere, high-quality mentoring can also provide students the support they need to deal with life circumstances (Moak & Walker, 2014).

There are typically two distinct types of mentoring that take place in higher education: traditional and peer mentoring. Peer mentoring and traditional mentoring are similar in that they both offer an exchange of advice, support, and information regarding tasks, development, and success; however, they differ in key ways (Holt & Lopez, 2014; Kram, 1983). With the growing demand for online courses, creating meaningful mentor/protégé experiences at a distance is also necessary to support student success (Buban 2013).

First, we will define the different types of mentoring experienced as part of this undergraduate research lab, including traditional, peer, online and face-to-face. Then, we will discuss our roles and experiences in the lab, as well as the different ways that we mentored and/or were mentored during the semester.

Traditional Mentoring
Kram and Isabella (1985) defined traditional mentoring as a hierarchical relationship in which a more experienced person mentors a typically younger, less experienced protégé, with the goal of supporting the growth of the protégé. In higher education, traditional mentoring usually involves a faculty or staff member and a student. The broader technical functions of traditional mentoring include sponsorship, coaching, protection, exposure, and visibility (Kram & Isabella, 1985). The psychosocial functions of a traditional mentoring relationship include acceptance, confirmation, counseling, and role-model friendship (Noe, 1988).

Peer Mentoring
In peer mentoring, the mentor and protégé are comparable in age, experience, and power (Kram & Isabella, 2005). In terms of technical functions, peer mentoring is limited to sharing information, strategizing, and providing academic support (Holt & Lopez, 2014; Kram, 1983). The psychosocial functions of peer mentoring and traditional mentoring are similar as they both offer confirmation, emotional support, feedback, and friendship (Kram, 1983), though peer mentoring may also increase protégé self-esteem and retention (Collings, Swanson & Watkins, 2014). In higher education, peer mentoring is considered more accessible and relatable to students than traditional mentoring (Holt & Lopez, 2014). Crisp (2009) asserted that mentoring among undergraduate students as peers can provide a protégé with emotional guidance, help with academic coursework and degree/career selection, and even provide a role model to the protégé.

Face-to-Face Mentoring
Face-to face mentoring occurs in person, and includes verbal and visual communication. Traditional face-to-face mentoring has been the dominant type of mentoring in higher education. In this setting, a faculty member is the expert and is paired with a student, who is the protégé (Schlosser & Gelso, 2001). In some cases, universities implement formal mentoring programs to improve gender and cultural diversity in their programs. This model is known as the apprentice model wherein a faculty mentor serves as a mentor to undergraduate or graduate students (Campbell & Campbell, 1997). The apprentice model has generated favorable outcomes for universities because it has helped improve academic performance and retention.

Online Mentoring or E-Mentoring
In an online mentoring relationship, the mentor and protégé primarily rely on the use of electronic communications to meet the mentoring goal, which is to promote the success of the protégé. This can include email, text, video conference, and telephone conference (Thompson, Jefferies, & Topping, 2010). Due to technological advances and a steady increase in online and distance learning, the demand for online (or e-mentoring) has increased. E-mentoring is inherently more accessible, affordable, flexible, and, thereby, more inclusive (Ensher, Heun & Blanchard, 2003).

Additionally, due to increased accessibility, flexibility and the low cost, e-mentoring can typically be implemented on a larger scale than face-to-face programs.

Expanding Mentoring: Developmental Networks

While mentoring focuses on a single relationship between a mentor and protégé, research indicates that developmental networks may be more impactful for a protégé. Kram and Higgins (2001) described a developmental network as a mentoring network in which a protégé draws career/collegiate and psychosocial assistance from multiple sources rather than from a single mentor. The network can include mentoring relationships in a professional, academic, community, or family organization. The benefits of a mentoring relationship are similar to the benefits a developmental network can provide: support, exposure, visibility, sponsorship, protection, as well as psychosocial benefits like friendship, counseling, and collaboration. In both relationships the mentor/developer takes an active interest in the protégé's professional/academic career by offering developmental assistance (Kram & Higgins, 2001). However, developmental networks offer more support to protégés because their network is wider than one mentor. This helps them achieve various career outcomes ranging from promotions to career advancements, without relying on one person's perspective or experience (Dobrow, Chandler, Murphy, & Kram, 2012).

Critical friendships are another form of support that can be a part of a developmental network. Swaffield (2008) described a critical friend as a 'detached outsider' who directly assists someone through critical feedback, questioning, reflection, and providing a different perspective. The critical friend is concerned about the growth of the person they are helping, and they want that person to succeed in their endeavors. Trust, constructive criticism, and advocacy are the core components to a critical friendship. In a critical friendship, there is a focus on learning, a concern for the learning conditions, and a dialogue where critical friends can freely exchange ideas and voice concerns (Swaffield, 2008). Critical friends are important contributors in a developmental network because they can provide new ideas and perspectives that expand the protégé's knowledge (Fletcher & Mullen, 2012).

Faculty Perspective, Dr. Brandy A. Brown

In a traditional college psychology program, research is an integral part of the curricula. However, in less traditional psychology programs, like an online program, integrated research in the curricula is a rare occurrence beyond the required methods courses. When I assumed the role of Program Director of Organizational Leadership (OL), I was aware of the shortcomings of the online learning environment. When surveyed, more than half of OL students expressed interest in pursuing various advanced degrees: Masters of Business Administration, Masters of Applied Psychology, and, for some students, a Ph.D. in Industrial-Organizational Psychology. Unfortunately, the UAS suffered from an issue common to both transfer and global institutions: Research at the undergraduate level was unavailable to most students. Students needed greater access to information on pursuing their educational goals, along with exposure to research. In short, they needed a place to further their learning experiences and obtain other skills critical to their development. In response to these learning gaps, Dr. Laura Lunsford and I decided to form an online undergraduate research lab.

In 2015, we developed online methods for sharing work, managing information, gaining research experience, and linking to the research software and other resources provided by the University. We mentored students on their research projects through Google Drive, and used a shared Google Doc agenda edited as a team to track progress. We held a weekly team meeting on Adobe Connect where we discussed scholarly articles. Dr. Lunsford and I used these meetings as opportunities to mentor each student through the research process, while learning as a team. This process worked well for individual mentoring and group accountability, but at the end of that first year we discovered some major shortcomings.

Possibly due to the presence of two faculty members with research expertise, no other leaders emerged and students, unless required to work with each other on a specific project, failed to develop mentoring skills or relationships among themselves. Even then, typically we observed students working together independently rather than collaboratively, passing work back and forth and 'owning' separate portions of what we intended to be shared efforts. We wanted students to peer mentor one another and form the type of valuable developmental network and critical friendships that Dr. Lunsford and I experienced as developing scholars. However, that was not occurring organically in the online environment despite our attempts to promote peer mentoring. While the team communication was robust during the weekly video meetings and team activities, and the online agenda facilitated completion of assigned work, there was a disconnect among students.

Additionally, students were waiting much too long to report issues they had in the research process, which ultimately curtailed the entire team's progress. Through informal interviews, we learned that students were hesitant to bring their research issues directly to faculty, but were also not comfortable reaching out to their peers because they believed they shared the same skill level. They were denying themselves psychosocial and instrumental support by not engaging with one another. This is exactly the type of issue peer mentoring is perfect for addressing, so in Fall 2016 we approached Christina to become Lab Coordinator. Our hopes were that this role would solidify and formalize the creation of the developmental network Dr. Lunsford and I both experienced in research labs as students.

Table 1

MLC 2016 Key Themes and Successful Mentoring Tactics.

Theme/Tactic	2016 Lab Method
High-Quality Relationships Focus (Lunsford, 2016)	Drs. Lunsford & Brown are trained in this approach, as was the Lab Coordinator (LC)
Protégé Gains Focus (Duster, 2010)	Research assistants (RA) guided in taking advantage of their protégé status, using the LC and a developmental network appropriately (covered these in lab meetings)
Developmental Network Formalization (Chandler, Hall, & Kram, 2010)	MLC was structured as a developmental network in action, and RAs were assigned tasks to connect with developmental contacts
Peer Mentoring Modeling (Sorcinelli & Yun, 2007)	LC was a designated peer mentor who also encouraged the practice among RAs
Online Communication Modeling (Lin & Lee, 2006)	Methods used for online lab modeled effective online communication, and in MLC meetings we provided each other feedback on what was working or not in this area

With the addition of a formal Lab Coordinator role, several positive changes emerged in the lab. It created a formal mini-developmental network, and ensured students had psychosocial and instrumental support at multiple levels. Christina was ideal for this role as she was receiving training in mentoring herself via the preceptorship she was involved with, but also because she knew to encourage peer support among the lab members from her previous experience and was adept at

connecting them to others and to additional resources. One-on-one weekly meetings with Christina ensured Dr. Lunsford and I were more aware of individual research assistants' struggles and progress, allowing these things to be addressed in the weekly live video lab meetings in a timely manner. Adding a lab coordinator/peer mentor enabled the group of researchers to bond over the process in a way we had not seen before, and several critical friendships emerged spontaneously. In addition, it modeled the development of effective developmental networks and many students began to reach beyond the lab to other sources of support. This was something we had to previously prompt students to do, which usually did not lead to a relationship but only added to the tasks at hand.

This developmental network modeling resolved many of the issues we had with the distance inherent in a fully online research experience, to our profound satisfaction. In contrast to our 2015 lab experience, in 2016 we had double the number of research presentations produced, had our first student submissions to a national conference, and were able to use lab work to produce a manuscript for the first time. We continue to use this model, and our results have further increased in terms of research output. In 2016, one student presented on three mentoring topics at the University of New Mexico's Annual Mentoring Conference. In contrast, this year four students from the lab are presenting their research at the same conference.

Student Perspective, Christina Kalel

My mentoring experience during the semester took three forms. First, I coordinated the MLC and served as a peer mentor and leader to all the research assistants in the lab. Second, I peer mentored Jessala Grijalva, by phone and online, as part of a preceptorship. In the preceptorship, I learned different methods for high-quality mentoring, which I then used to support Jessala's personal and academic growth. This included offering support with research, as well as other areas where I had more experience or resources (i.e., career exploration). Third, as Dr. Brandy A. Brown's protégé I met with her face-to-face on a weekly basis to discuss the lab, my career and educational goals, and personal issues.

Online Peer Mentoring

Lab coordinator. I have informally mentored others throughout my time in college because many students felt intimidated by professors, and addressed their questions and concerns to me instead. Over the years, I became accustomed to answering questions, offering advice, sharing resources, and reviewing drafts. In the MLC, I found myself explaining concepts and processes outside of the meetings to students who did not wish to bother our faculty advisors, even before I took on the formal role of lab coordinator.

Research indicates that peer mentoring can positively influence self-esteem (Collings, Swanson & Watkins, 2014). I noticed that as I worked with students they seemed more confident about themselves and their abilities as college students. When I was promoted to lab coordinator, I was finally able to peer mentor students in a more structured way, which was exciting and intimidating simultaneously. Would I be able to offer constructive feedback, support, and useful information for an entire semester? Could I build a high level of trust with other students without ever meeting face-to-face?

When I began my new role as coordinator, I decided my primary job would be to offer support and quick answers to questions about the research process, as well as encouraging each lab member to participate in the weekly meetings. I used what I had learned about communicating online to send out engaging emails to the group, keeping everyone updated on their tasks and what they needed to prepare for the next meeting. I also paid attention to my tone when leading the meetings, so that I could present a welcoming and non-intimidating persona for the research assistants. It was a difficult balance between leading the meetings, checking up on their work, and being a supportive peer.

Preceptorship in peer mentoring. When I began formally peer mentoring Jessala as part of my preceptorship, there was no clear roadmap as to what would be successful. I assumed I would learn more formal mentoring skills from the preceptor course I was taking. Instead, the course taught me how to develop a high-quality relationship, how to have learning conversations, and introduced me to mentoring best practices (Lunsford, 2016).

A high-quality relationship is defined by the level of trust and rapport between the mentor and protégé, and resembles a good friendship (Dutton & Heaphy, 2003). To build this type of relationship intentionally, it is recommended that the mentor be a good listener and practice their empathetic skills. Using learning conversations, or reflective conversations that focus on the process of learning a new skill, is an invaluable way to help a protégé deepen their understanding of their own growth (Lunsford, 2016).

In the course, I was required to interact on a weekly basis with Jessala and I was assigned a reflective essay every four weeks to reflect upon the quality and development of our mentoring relationship. The structure of the course was flexible enough to allow our relationship to grow organically.

Online environment. The online environment of the preceptorship allowed us a great deal of flexibility in conducting our weekly meetings, which was necessary given our demanding schedules. We were required to check-in once a week for 15 minutes, but usually spent 30-60 minutes to talk more comprehensively about lab, courses, work, and family. We used a meeting agenda and regular emails to hold each other accountable. We found common interests and views right away, and due to our similar personalities, we were able to form a strong friendship over the course of the semester in addition to our mentor/protégé relationship. This friendship proved to last far beyond the semester in which we met.

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One of the difficulties in online mentoring is communicating clearly without the cues that are present in face-to-face communication. However, years of online coursework had helped prepare me for communicating online with little misunderstanding. Our meetings took place on the phone, through Google Hangouts, or Adobe Connect, allowing us to utilize video, audio, and text chat communications. Each mode required various communication techniques: In video chats, I could talk in a fairly normal way, trusting my body language, facial expressions, and tone to convey the right message; on the phone, I was careful to maintain a positive and empathetic tone of voice since other non-verbal cues were missing, and, when our conversations were completely text-based, I used more supportive language to make up for insufficient tone or body language.

Our weekly check-ins were centered around Jessala's life, research efforts, and her coursework. We would follow-up in between meetings with email if needed. We were in two distinct academic fields; I was a Psychology major, and Jessala was a Government and Public Administration Major. Since I was not an expert in government fields or research, I was unable to offer help with her coursework. Instead, I focused on listening, let her lead the discussion, and then provided feedback when appropriate. I offered her two kinds of support through the semester, which matched the types delineated by Kram & Isabella (1985): instrumental and psychosocial.

Instrumental support. When relevant, I would share strategies on succeeding in college and would share resources like articles and videos that I thought might be useful. When I first became a University of Arizona student, I signed up for all the listservs or email distribution lists I found interesting. This enabled me to share some of that information with Jessala. Due to the relatively equal experience we had, I was not capable of offering career or higher education advice like a traditional mentor would. Instead, I worked questions she had into conversations with faculty to make use of their knowledge base. Finding answers for Jessala also helped me create a stronger developmental network of my own.

We also discussed the research lab and her project, and this was probably the most productive of our session topics. I felt experienced enough in online research due to my two previous semesters in lab to give her tips, help her with technological issues, and encourage her to share during meetings when she found something that could be useful for the whole group.

Psychosocial support. In our mentoring relationship, I offered emotional support throughout the semester, which is typical for peer mentoring relationships. We are both divorced moms of three, and share many similar life experiences. This allowed me to be more empathetic as opposed to someone who did not understand the family dynamics of raising children without a supportive spouse, and how this can affect career and college goals. Additionally, I was able to provide a safe place to bring these widely-varied concerns, which was a helpful way to manage and cope with stress.

Traditional Face-to-Face Mentoring

I met with my mentor and internship supervisor, Dr. Brown, once a week. Our meetings were typically face-to-face, though Google Hangouts were used occasionally. In our meetings, we discussed the research lab, that status of projects I was working on as an intern in her department, the preceptorship in mentoring, and my personal life. At the time, I was applying for graduate school and Dr. Brown offered me valuable advice about the process. We also discussed issues with my coursework and how to overcome them. These meetings gave me an opportunity to discuss my personal and academic goals, and gain the benefit of Dr. Brown's years of experience in these areas. Even when the meeting topics were fairly informal, I learned a great deal about academia, research, graduate school, professional dress, and advancing my career.

> "These meetings helped me feel more confident in my abilities as a leader, a mentor, and a student. I was constantly encouraged to expand beyond my comfort zone which allowed for greater personal and academic growth."

These meetings helped me feel more confident in my abilities as a leader, a mentor, and a student. I was constantly encouraged to expand beyond my comfort zone which allowed for greater personal and academic growth. When I first began in the lab, I was shy and uncertain about my abilities and knowledge, but the leadership role challenged me and gave me an opportunity to learn how to lead meetings, offer support, improve my writing, and increase my research efficacy. All these experiences helped me develop a strong sense of self-efficacy, which would prove invaluable as I entered graduate school.

Student Protégé Perspective, Jessala Grijalva

Most students who transfer into UAS come from a two-year college. However, I initially transferred to the Main Campus of the University of Arizona after earning my Associate's degree. I completed one semester in a traditional setting, then transferred to UAS because I needed more flexibility in my schedule in order to continue my studies. I'm considered a highly non-traditional student because I meet five of the seven characteristics defined by the National Center for Education Statistics (2017b): Hispanic, working full-time, single-parenting, running a household, and going to school full-

time. The transition was difficult for me because I was new to online courses. There were no lectures, no teacher's assistants, and the format was different from what I was familiar with. There were weekly readings and assignments, but very few engagement opportunities with other students. In addition, my major was nearly complete and I needed to pick a minor and start working on that part of my degree. I ended up minoring in Organizational Leadership (OL), which is part psychology and part business: two subjects I had never studied.

Dr. Brown was one of the first professors I encountered at the UAS. Dr. Brown was inclusive, organized, and approachable. I reached out to Dr. Brown through email to express my frustration with online classes and the insufficient engagement. Dr. Brown informed me about the opportunities available in her research lab, and I joined it the next semester.

When I joined the lab, Dr. Brown suggested I work with Christina and be her protégé. Christina introduced herself via email, and advised me to reach out to her if I had any thoughts or questions I wanted to share with a peer instead of a teacher. She shared the benefits of the lab, and explained to me how she had grown from the experience. She also disclosed that she worked full time and was a mother of three. Christina was earning course credit for mentoring me, but never discussed her class requirements or assignments. She kept the mentoring relationship informal, and simply set a goal that we talk once a week.

As a student, I never shared personal details with my peers or with faculty, like the fact that I worked full time or was a single mother to three children. I felt that sharing such details could exclude me from potential opportunities because my peers or professors would assume I did not have the time or that I would not be reliable. At the time, I was unaware of the demographic makeup of the UAS, but later I learned the average age of UAS students is 32, most are parents, and almost all students work.

In lab, we all worked on different research projects, but the weekly meetings brought us together. In these meetings, we discussed the progress of our projects and any obstacles we faced. We also added our upcoming weekly goals into the group's agenda. Every other week we reviewed an article of interest. Some weeks, the article was assigned, and some weeks students chose articles based on what their topic was. The article discussions were advanced, I did not understand the methods, and I struggled to recognize pertinent information from the readings.

I came into the lab with no background in research. I never took statistics or research methods courses. The onboarding process for the lab involved a short 20-minute "research methods" free lesson on Udacity. I was aware that research labs on Main Campus would have required me to have a background in statistics and research methods because they were more competitive, less inclusive, and typically involved graduate students. Having a peer mentor helped me succeed in the lab because I could learn processes and methods from Christina. In addition, I received extra attention from Christina because I was her mentoring preceptorship protégé and we were required to check in weekly. Our weekly one-on-one meetings were a safe space for me to ask questions, to discuss any issues I had, and to receive feedback. Christina was more experienced in research and was much more proficient in navigating the online learning environment, and she shared her best practices and experiences with me throughout the semester, which helped me grow.

I relied on Christina to help me understand my role in the lab, to direct my research and to help me understand the research process. I was determined to understand the process quickly. The extent of my involvement with academia was through my study of government and economics, where I used academic articles to support my theories and arguments in courses. Government and law articles typically involve descriptive analysis, though there were a few articles I had read that included some

science and theory, such as articles that analyzed voter behavior, shifts in the political parties, and the spectrum of ideology. Reading articles about leadership, mentorship, and culture was fundamentally different. My peers studied psychology, anthropology, and organizational behavior, so they were familiar with the genre, vocabulary, and content of the academic articles. This was all new to me, so I spent weeks examining articles on leadership and trying to understand the rhetoric and terminology.

My mentoring relationship with Christina was extremely beneficial. Christina shared her insight in our weekly chats, she shared her resources via email, and she blogged/documented her experiences. She helped me overcome the "knowledge gap." Our mentoring interactions involved email exchange, weekly phone conversations, and texting. We only met in person once during the semester, despite both living in the same city, due to our demanding schedules. I would occasionally reach out to Dr. Brown if Christina was unavailable, or if I needed to escalate a question or concern that exceeded Christina's reach.

Christina urged me to inform Dr. Brown that I was interested in coordinating the lab in the Fall of 2016. When I expressed my interest in the position, Dr. Brown agreed I should be coordinator. In the last weeks of lab, Christina shared her best practices with me. She mostly explained how she resolved issues, kept team members on track, and shared tips on clear communication.

During the spring, I relied on Christina for direction of my research project, occasionally reaching out to Dr. Brown. During the summer, I worked more with Dr. Brown, as Christina had graduated and left the lab. Dr. Brown did not discourage any ideas I had; she empowered me to take ownership of my ideas by making additions and changes to our class website and blog. I on-boarded one new graduate student to the lab this semester and managed a full-time student who had started the lab the same time I did. I focused primarily on coding qualitative data and performing research during this time.

Today, Christina and I have transitioned from a peer mentoring relationship to a critical friendship and continue to talk weekly. We are currently co-authoring two academic articles and we recently presented a workshop teaching online leadership at the National Collegiate Leadership Conference in February 2017. In October of 2016, Christina and I worked on our resumes and our interview skills together, served as professional references for each other, and were both hired by the University of Arizona in the same week. Christina is currently a graduate student, and is helping me apply and prepare for graduate school.

In an ideal mentoring scenario, protégés, mentors, and the institution all benefit from the experience. This mentoring experience was idyllic and continues to grow and benefit all parties.

Final Thoughts

The scaffold mentoring model presented here was beneficial to all parties involved. However, this case study drew from observations and interviews over two years and helped us to observe changes and developments in student processes. These results are not generalizable and may be specific to our particular environment. Our experience can be analyzed for key themes and successful tactics, particularly for those institutions also serving a diverse body of students via non-traditional means.

This case demonstrates some differences between online and face-to-face mentoring, and traditional and peer mentoring, with examples on both ends of the spectrum. For faculty or staff who are uncertain which methods will work best for them, these stories can be compared to your personal knowledge of your environment and the people you work with to inform decisions about what will work best in your mentoring situation.

Online degrees are now offered at 62% of 2,800 colleges and universities, but we know the issues: Retention is lower for online students in general, and much lower for nontraditional students who face extra barriers (Hoyt, Howell, Touchet, Young, & Wygant, 2010). We also have tools to help with these issues: Mentoring is shown to increase a student's commitment to an institution (Collings, Swanson, & Watkins, 2014), which tells us that our institutional leaders need to focus on integration and engagement (Kolenovic, Linderman, & Karp, 2013). Given that our online programs attract nontraditional students, we can infer that institutions need to create learning spaces that expose students to research, prepare them for higher degrees by involving faculty, and create environments that invite peer mentorship. Developmental networks like the one employed in the MLC can be used to create a more open and collaborative intellectual safe space for students to learn, grow, and build their own developmental networks that will remain intact after they leave their degree programs.

Implications

Including peer mentoring in courses and labs, whether online or in person, empowers students to expand their knowledge by teaching others the things they have learned. It creates a network of support much wider than a simple faculty-student relationship and may increase retention rates for non-traditional students (Collings, Swanson, & Watkins, 2014). By supporting these side-to-side relationships in research and in class, faculty members can offer focused support to the students who need help that peer mentoring cannot provide. Encouraging these relationships in the online environment also offers a feeling of connection to students who may feel more alone as distance learners. Research suggests that other benefits peer mentoring can provide can include helping students become more culturally adept, improve communication skills, understand how to facilitate learning, and be able to collaborate and develop and maintain relationships (Colvin & Ashman, 2010; Murphy, Mahoney, Chen, Mendoza-Diaz, & Yang, 2005). Additionally, the scaffold mentoring model expands the student's developmental network which will ultimately help provide long-term support for students beyond their involvement in the lab, and will help advance student personal, professional, and academic goals.

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