FutureReview

FutureReview

— International Journal of Transition, College, and Career Success —

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FOREWORD

The Future Institute Research Center is proud to publish our forth issue of *Future Review: International Journal of Transition, College, and Career Success.* We want to thank the authors for submitting their excellent work to our journal and the reviewers for providing their time and effort in evaluating submissions.

We have four articles in this issue. We start with two contributions to our full-length *Peer Reviewed Research* section. In a qualitative study, Christina Yuknis and colleagues explore the experiences of first-year deaf college students. Stephanie Cawthon and colleagues use exploratory factor and path analyses to examine variables related to inclusive teaching. Both articles have implications for how educators and educational institutions prepare students for, and support students during, transitions.

After the full-length empirical pieces, we have a peer reviewed *Brief Report* by Scott Richardson. This article studies the relationship between emotional intelligence and interviewing skills in Doctor of Physical Therapy students. The article could stimulate more research in this area and influence how DPT programs prepare students to transition from their academic programs to their physical therapy practices.

The final article is in our *From the Field* section. Emily Baer and colleagues describe the importance of partnerships between community colleges and universities. The authors not only describe one such partnership, but also describe how students can be supported as they make the transition from a community college to a university.

As editor of this journal, the experience of working with the authors and the reviewers has been thrilling, humbling, and satisfying. I hope readers of the journal think deeply about the contributions these articles make to the field.

John Klatt, *Future Review* Editor

FutureReview

PEER REVIEWED
RESEARCH ARTICLES

Acquiring Adulthood:
Transition Experiences of First-Year
Deaf College Students

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Gallaudet University

Transitioning from secondary to postsecondary education is a big step in a young person's life, as they move toward greater independence and responsibility. Within marginalized groups there is a negative correlation between the number of students who enter college and the number of students who graduate. Research demonstrates that a high percentage of students who are deaf matriculate to postsecondary institutions. However, a much lower percentage graduate from college or university. Using grounded theory, this study investigated how first-year deaf college students perceived their transition to postsecondary education. This research identifies how students described their college preparedness and how they managed challenges in their first year. Results show that participants talked mostly of acquiring adulthood and the challenges of gaining independence.

Keywords: Transition, deaf, college, grounded theory, qualitative

Introduction

Students who are deaf or hard-of-hearing (hereafter, deaf)[1] in the United States (US) attend postsecondary institutions at high rates (Newman, et al., 2011), but only one-third of those who start college persist through graduation within six years (Newman, Madaus, & Javitz, 2016, Newman et al., 2011). There is a significant gap between deaf and hearing students who complete postsecondary degrees (Garberoglio, Palmer, Cawthon, & Sales, 2019), although both enter college at high rates. Thus, it is critical to examine what deaf students experience when they enter college.

College readiness can be examined by starting with the process of transitioning from secondary to postsecondary education. Prominent transition models focus on what secondary schools do to prepare students for postsecondary life (Kohler, 1996; Punch & Duncan, 2020; Test et al., 2009) or what factors influence a student's departure from postsecondary education (Tinto, 2012). Transition research in deaf education often focuses on how transition variables influence postsecondary outcomes (Cawthon et al., 2015) or examines factors of successful deaf people in their careers and considers how to map those skills onto deaf education (Hintermair, Cremer, Gutjahr, Losch, & Strauß, 2018). This body of research describes how to prepare for postsecondary

education or key variables influencing the outcomes, but misses the actual transition process itself.

Schlossberg's (1981) model for transition attempts to capture the process of change for adults, because "adults continuously experience transitions…[and] all we know for certain is that all adults experience change and that often these changes require a new network of relationships and a new way of seeing oneself" (p. 3). Schlossberg begins from the premise that adaptation to transition is the key to understanding the outcomes of change, and that different variables will be in play depending on the context. This is relevant to the present study, where context is a critical aspect to understanding deaf student transition to college, particularly in an environment where communication barriers are intentionally removed.

Schlossberg's (1981) model begins with a transition event that is influenced by three factors ultimately leading to a successful or unsuccessful result: characteristics of the individual, characteristics of the pre- and post-transition environment, and characteristics of the transition itself. Characteristics of the individual considers the intersectional identities and previous transition experiences of the person. Characteristics of the pre- and post-transition environment considers the physical environment as well as support systems

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[1] In deaf-related research, a distinction is made between Deaf and deaf. The term Deaf is used to refer to a person who is culturally Deaf and participates in the larger Deaf Community, as this presents a highly unique outlook on school and life and interactions. The term deaf refers to any individual with a hearing loss, which is the primary term used in this paper since cultural identity cannot be assumed.

such as family, friends, or institutions. Finally, characteristics of the transition itself include change of role, the source of the transition (internal or external), timing, duration, degree of stress, and positive and negative effects. This model offers a guide for thinking about transition as a process.

Characteristics of Individuals

According to Schlossberg (1981), individual character-
-istics influencing adaptation to transition include factors such as age, physical health, race, ethnicity, socioeconomic status, coping strategies, value orientation, and previous experience with the transition. Students' hearing status is a critical characteristic for this study because deaf students' attrition is far greater than the general college student population.

A 2011 survey of deaf students explored the connection between personal factors and achievement in the first semester of college (Albertini, Kelly, & Matchett, 2012). Albertini et al. found that, generally, participants showed below average "general coping skills," which includes social skills, and relatively weak time management, concentration, motivation, self-discipline, anxiety, and worry about school. Students' primary strength was using support strategies such as using the tutoring center, studying with a friend, or seeking help from the course instructor.

Similarly, Hintermair et al. (2018) interviewed 32 deaf professionals in Germany to identify factors that helped them succeed. They asked participants about success factors, and participants frequently named personal traits such as self-confidence, self-discipline, independence, and problem-solving skills. While the participants' college experiences are not reported, the skills to be successful in professional life can be evaluated in terms of skills needed for success in college. Problem-solving and self-advocacy are areas of weakness for deaf college students (Albertini et al., 2012), thus they should be part of transition planning (Punch & Duncan, 2020).

Characteristics of the Environment

The second part of Schlossberg's (1981) model identifies the environment as having three major components: interpersonal support systems, institutional supports, and the physical setting. Interpersonal supports consist of the relationships with family and friends. While family support may be helpful in transitions (Hintermair et al., 2018), there is research that suggests that it may not be a significant factor for deaf students (Convertino, Marschark, Sapere, Sarchet, & Zapan, 2009).

However, interpersonal support systems while transitioning to college are important. Social integration of students, particularly students with disabilities, on campus has been shown to be a factor affecting persistence through graduation (Mamiseishvili & Koch, 2011; Tinto, 2012; Wintre

& Bowers, 2007). Connections, formal and informal, improve student retention (Tinto, 2012). Particularly for deaf students, social skills developed in high school are essential. The ability to form social connections relies on language and communication, both of which are affected by being deaf. Social challenges may be compounded. Cawthon et al. (2015) found that postsecondary graduation is predicted by social skills, and recommended that Individualized Education Plan (IEP) teams incorporate social development and advocacy skills. Punch and Duncan (2020) included similar recommendations in their model for transition planning for deaf students.

In the US, *The Individuals with Disabilities Education Act* (IDEA) requires that all students receiving special education services be provided with a transition plan at age 16 which is the primary source of institutional support for transitions. The transition plan prepares the student for life after exiting secondary education and covers independent living, postsecondary education, and vocational plans. This critical tool is supposed to help schools prepare students upon exiting high school.

Transition planning has positive effects on postsecondary education outcomes (Newman et al., 2016; Test et al., 2009). Test et al. reviewed correlational literature of secondary transition. Transition programming during the last year of secondary education was one of four factors that showed at least a moderate positive effect on postsecondary education enrollment. Punch and Duncan (2020) suggest that transition programming include collaboration between the school and external agencies.

Finally, the physical environment plays a key transition role. Transition literature on college students with disabilities often discusses disclosure of disability and receipt of accommodations (Newman et al., 2011). In our study, participants were from a university designed for deaf people. While most deaf college students do not attend a college for the deaf, our study investigates deaf students' transition experiences without the significant communication barriers at traditional universities. Our study is not intended to be generalized to the entire deaf population, but rather to open perspectives on what it means to be a first-year deaf college student.

Characteristics of the Transition

The final part of Schlossberg's (1981) model discusses the characteristics of the transition itself using these variables: role change, affect, source, timing, onset, duration, and degree of stress. These elements are part of the postsecondary transition. Going to college is regarded as a positive, temporary step between high school and career for which students can prepare.

Much research on first-year college students focuses on academic preparedness (Adelman, 2006) and persistence (Mamiseishvili & Koch, 2011; Wintre & Bowers, 2007). Adelman asserts that, "the academic intensity of the student's high school curriculum still counts more than anything else in pre-collegiate history in providing momentum toward completing a bachelor's degree" (p. xvii). High school academic preparation may show a predictive value of the postsecondary academic achievement for deaf students (Convertino et al., 2009). While academic preparedness and persistence can be indicators of college success, they may not be good predictors for transition to college (Wintre & Bowers).

Luft (2014) surveyed programs providing transition preparation services to deaf secondary students. The results indicated that programming focused on pre-college experiences like entrance requirements and applying to schools. However, there was less attention to other factors such as site visits or orientation programs, and there was no discussion of longer-term transition experiences that would facilitate adjustment to college.

Significance

Our research review revealed that most of the transition literature uses large-scale datasets that neither probe nor capture the personal experiences of students who are deaf. One qualitative study by Hetherington et al. (2010) included a single hard-of-hearing student in their exploration of transition-planning experiences of students and their parents. As such, this study provides deeper insight into the lived experiences of deaf students as they transitioned to college. Our research describes how deaf college students at one university experience the transition process and how they viewtheir preparation experiences. Personal perspectives of the transition experience provide a nuanced understanding of what it means to transition to college.

This study also affords us an opportunity to examine the transition experiences of deaf college students when communication challenges are minimized. Because deaf students face barriers in just getting access to courses, professors, and social events on traditional college campuses, it can overshadow the other aspects of transition. Thus, the study location at a university for deaf students enables us to focus on deaf students' transition experiences without the complicating factor of communication challenges.

Methods

We used an exploratory qualitative design to learn how first-year deaf college students describe their transition to college. Specifically, we sought to uncover factors that students identified as barriers or facilitators of a successful college transition. All participants attended the same university in the US, a university designed for deaf individuals. All classes are taught in ASL, and almost everyone on the campus is able to sign. New buildings are designed to use concepts of "deaf space," and communication barriers are actively minimized as much as possible.

Participants

A purposive convenience sample of eight first-year deaf college students was identified. All of the participants attended high school in the US, because we wanted participants who experienced the IDEA transition planning requirements. An overview of the participants can be seen in Table 1.

Participants varied along gender, racial, parents' hearing status, and educational experiences. Participants were asked about parental hearing status: three participants indicated they had two deaf parents, one participant had one deaf and one hearing parent, and four had two hearing parents. During high school, six participants attended a school for the deaf and two attended mainstream programs. Deaf school attendees received instruction in ASL and had teachers who were deaf. The two participants who attended mainstream programs reported using interpreters for classes.

Data Collection

We collected three types of data for this study: demographic questionnaires, semi-structured interviews, and participant journals. This approach allowed for data triangulation which enhanced the trustworthiness of the overall study (Charmaz, 2014). First, the questionnaire provided data regarding participants' background information and doubled as a sample criterion screening. Second, the interviews provided data pertaining to participants' preparation for college, their expectations of university life, and how their expectations correlated with reality. All the interviews were conducted in ASL with two researchers (one deaf and one hearing). Interviews were recorded and lasted 26 minutes on average; after which researchers debriefed together and wrote memos in their notes. Third, the journals allowed participants to provide weekly insight into their experience of college life over the period of 5 weeks after the interview. Journal submissions varied among participants (see Table 1), with a total of 16 logs collected, and all of the logs ranged from a half a page to a full page in length. Participants were given the option to communicate in their preferred language for journals; all participants chose to write in English.

Data Analysis

Data were analyzed using grounded theory. Initial coding was used to identify early analytic ideas while also remaining

Table 1. *Participant overview*

Participant	Gender	Ethnicity	Dorm In HS	Type of HS	Parent Hearing Status	Region of US	# of Journals
1	F	White	No	S/D	Deaf	East	0
2	F	White	No	MS	Hearing	East	0
3	F	POC	Yes	S/D	Hearing	South	2
4	F	POC	Yes	S/D	Hearing	South	2
5	F	White	No	S/D	Deaf	Midwest	1
6	M	White	No	S/D	Deaf	Midwest	4
7	M	POC	Yes & No	S/D	1 Hearing 1 Deaf	South	3
8	M	White	No	MS	Hearing	Midwest	4

Note: F=female, M=male, POC = person of color, MS = mainstream, S/D = school for the deaf

close to the data (Charmaz, 2006). The research team watched one interview together and coded it in English line-by-line to calibrate our thinking and approaches. Remaining interviews were coded independently then discussed as a team. We watched sections of the interviews as needed to agree on initial codes. As the videos were not translated into English prior to coding, time-stamps were used to identify location. All the quotes in this study have been translated into English by the researchers, who are fluent in ASL.

Theoretical sampling was used to obtain additional data that shaped the final categories (Charmaz, 2006). This process led us to saturation, where no new insights or properties of the categories were obtained (Charmaz, 2006).

While continuing to collect and initially code data, the research team used a recursive process common to grounded theory methodology and simultaneously used focused coding to begin looking at the codes more analytically and begin categorization (Charmaz, 2006). This process made extensive use of memowriting, comparative analysis, and diagramming as analytic tools to help develop the "story" of the data.

Charmaz (2014) provides a set of criteria for establishing trustworthiness and credibility in grounded theory. The research team used the following strategies to establish

trustworthiness; 1) employing systematic procedures and protocols; 2) collecting multiple sources of data; 3) conducting member checks with participants regarding the resulting grounded theory; and 4) among the research team, working as inquiry auditors to keep track of theoretical processes and challenging each other's biases or hidden assumptions. For member checks, the resulting grounded theory was sent to participants twice for their feedback. Two participants responded in the affirmative, and one had an additional question that was answered.

Results

Data analysis resulted in the development of a grounded theory with one core category, *Acquiring Adulthood*, which is central to the phenomenon under study and underpins each of the three key categories: *Balancing, Growing, and Capitalizing.*

Acquiring Adulthood

The notion of *Acquiring Adulthood*, evokes the action that is transition, an active process where change is occurring. *Acquiring* derives from the Latin words *ad + quaerere* which means literally "to seek to obtain." This movement is

manifested in the participants who are *seeking to obtain* their place in the adult world. Though seeking to obtain adulthood may not have been the initial goal during the transition, each participant appreciated the freedom to exercise agency by making decisions affecting their own lives.

For instance, participants were asked about what surprised them about college, which they invariably responded by discussing their new-found independence. Some participants directly signed FREEDOM, others signed INDEPENDENCE and others offered situations as examples to better illustrate the ideas.

> *I like having freedom in college...In the dorm, I don't have to wake up at a specific time to go to the cafeteria like I did in high school...I can sleep in if I want. I don't have to go to sleep at a specific time.*

Dorm life for high school students in residential schools is highly structured, as is the school day, so moving to the less structured college life was a welcome change. It is a new feeling to have control over one's time and schedule, but it is entirely different to take on additional responsibilities and realize what was taken for granted. Participants were overwhelmed at just how much their parents did for them. For example, one participant shared that while she was ready for college and had the requisite "adulting" skills, she was not used to managing her own affairs:

> *I'm less reliant on my family here. I can't go asking them for help, I have to do it myself. Like I just got sick so I had to drag myself over to the student health center. Or if I need to mail something, I have to go do it myself. I would have never gone to the post office myself before! My mom always took care of that for me.*

Participants appreciated the freedoms that came with college, but they also wrestled with finding motivation to do things they did not want to do. For example, homework is not always the most enticing activity, especially when parties or other social events are happening: "even if I block time to do my homework, there are distractions like my phone or getting caught up in social media. But I need to drag myself back to my homework." This participant recognized that she needed to manage time and motivation better, but had yet to develop the strategies to promptly complete the task.

This greater autonomy and self-determination is highly valued, but it also means that there are more responsibilities that participants were not always prepared to tackle, even if they had already experienced living in a dorm. Acquiring adulthood means that with the freedom to make one's own choices comes the responsibility of doing things one does not necessarily want to do.

Balancing

Becoming an adult includes learning to balance competing demands, such as social events, extracurricular activities, health, finances, and academics. One participant shared an early mistake he made by overcommitting and how he learned to prioritize homework:

> *During my first semester, I joined three organizations, which ate up my time. So between classes, friends, and organizations, I was a bit stressed out. That was my first taste of college life... So I've learned to balance life [this] semester. Things have been going well.*

Journal entries demonstrated that a lack of time management took a toll on this participant's academic performance and emotional well-being. During his second semester, he was still involved in three organizations, but his weekly logs showed that in efforts to keep up with homework, he regularly missed at least one meeting a week. This participant was not the only person to struggle with balancing social and work time. Another participant observed, "*It's easy to become distracted. In high school we had our little group of friends, but here [college] there are so many people everywhere. It's so easy to become distracted...So you have to know when to do homework and when to hang out.*" Participants had to find an equilibrium between work and fun.

Some participants were not prepared for the amount of juggling required in college. One participant wrote in their journal: *I started to track EVERYTHING I was obligated to do, from homework to projects from work. This helped get me on task and actually complete them. I did this in the beginning of the semester, but I relapsed and forgot to do that.*

And another participant shared, "*One thing I was not expecting time management...I had to manage laundry, homework, socializing, going off campus.*" Balancing competing demands is overwhelming sometimes, and this participant noted that he called his mom who would help to calm him down and move on.

Time was not the only limiting factor participants had to manage. Money played a role in determining whether to go out with friends or stay in. Participants had to balance available funds with their desires. Even if participants arrived at college knowing how to manage money, the cost of living on their own was still a surprise to more than one of them. "*I have to buy my own food, do more on my own. I've done my laundry for a while, but I didn't buy soap, and...those other added costs. It requires careful planning.*" Taking care of all the minor details could no longer be taken for granted.

Balancing competing demands, prioritizing what one wants to do versus what one should do, and managing time

effectively were all challenges faced as part of the transition. Participants largely shared the feeling of being overwhelmed with new responsibilities, but they also felt confident that they were able to find ways to balance those responsibilities and continue to enjoy their independence.

Growing

College is a time of great growth. Participants expressed that they had to learn to do things "*the college way.*" They grew in their understanding of adult life and learned to shift expectations for socializing, adjust support networks away from families to on-campus networks, and change how they studied. For example, though there may have been more social opportunities in college, finding friends was not always easy. Here two participants highlight the shifted expectations of socializing in college:

> *College is different from what I imagined. I thought I would have a lot of friends and we would all go party together and study together. But I arrived here, and I only have a few friends. And we don't do everything together. One friend has their own group and I'm not really a part of that group so I'm alone a lot.*

Participants had to change their expectation of academics as well. As high school students, the participants were accustomed to receiving ample reminders about upcoming assignments, and they could ask their teachers for help at any time. In college, the expectations of professors were quite different as these two participants noted:

> *I had to find out my homework on my own. In high school, teachers would say 'remember your homework is due…". But in college, they tell you one time and that's it. The rest is online...If you don't look at Blackboard, you miss homework. If I needed help with my homework, my [high school] teachers were willing to help me...However, in college they won't give you the answer and expect you to do everything yourself. If you don't understand, then you have to go to the tutoring center.*

Thus, college is a time of growing into the independence that they have been granted. This transition requires participants to grow in their interactions with others, especially in building social networks, and of self, when it comes to adjusting expectations for classes.

Capitalizing

Participants capitalized on college life by taking advantage of university offerings and leveraging networks. One participant noted how she utilized tutoring services: "*I go to [tutoring] for help… After some wrestling with the content,*

I understand it better. I pick up concepts better...and it's free!" Though not all participants capitalized on tutoring services, they did appreciate the plethora of options for academics and socialization, and several had already joined extracurricular activities.

In addition to formal offerings, participants recognized that being at a bilingual (ASL/English) campus was something unique, and they took advantage of the opportunities that open access to communication presented:

> *It's a different world...I have access, complete access. If I need anything, I know people can talk to me in my language...Some people don't think that's a big deal, but it is. If I'm passing someone on campus, I know that person can sign!*

Some participants built networks within the deaf community during high school then capitalized on them during college. One participant shared how participating in a high school event helped pave the way for a smooth college transition. *"I was involved in the Academic Bowl since freshman year of high school...so when I came here, it was easy to get a job. I work there now...That made it easier coming into college.*" Where this participant met campus employees, another participant had opportunities to get to know other deaf students through sports tournaments in high school. "*I know a lot of people in [the freshman dorm], most of whom I've met before. It's easy to interact. Instead of not knowing anyone, I know many people. That helps a lot.*"

Capitalizing on university resources and social opportunities is something that every participant discussed, whether they felt successful or not. The participants who attended residential deaf schools had an easier time finding their way on campus due to already having pre-existing relationships that they used to leverage jobs and social groups.

Discussion

What happens in the first year of college makes a difference in whether a student persists to a second year and ultimately, to completion of a college degree (Tinto, 2012). Schlossberg (1981) theorizes that change is inevitable and often demands individuals to develop new networks and a new sense of self. That is present in this study as the participants, first-year deaf college students, presented to us a model of acquiring adulthood; a process marked by three actions: balancing, growing, and capitalizing. Schlossberg's model captures the process of transitioning, which is helpful in understanding the transition phenomenon from a deaf perspective. Balancing is aligned to Schlossberg's transition characteristics as participants had to cope with the changes they were experiencing, growing is aligned to individual

characteristics as participants had to re-orient their perspectives, and capitalizing is aligned to environmental characteristics as participants took advantage of social and institutional support systems.

The perspectives shared by participants were sometimes expected and sometimes surprising. Most interesting was what the participants did not discuss - their IEP transition plans. Transition research in deaf education and special education emphasizes the importance of a transition plan (Luft, 2014, Newman et al., 2016, Test et al., 2009), although compliance with federal mandates may be uneven (Ballenger, 2016; Luft, 2014). However secondary students are not actively engaged in the process (Hetherington et al., 2010), which is not surprising if they are only provided generic transition services (Luft, 2014).

This may partially explain why participants did not mention their transition plans during the interviews, even when asked directly about preparing for college. Transition plans simply may not have been relevant nor specific-enough to have been meaningful to the participants (as observed in Ballenger, 2016). Thus, it is important that students receive student-centered planning with an individually tailored transition curriculum to prepare for post-secondary transitions (Hetherington et al.; Kohler, 1996; Punch & Duncan, 2020).

This disconnect with transition planning and engagement may help to explain why participants started college with expectations that were incongruous with reality. Even participants who had lived in dormitories in high school had to adjust. Of note is that the participants discussed how independence came with additional responsibilities they were not always prepared for, but they were able to figure out ways to keep moving forward.

Multiple participants mentioned that time management and balancing competing demands of their time were challenges. Albertini et al. (2012) found that students who are deaf reported lower confidence in managing time than their hearing counterparts, a skill that is predictive of academic success during the first year of college. Hintermair et al. (2018) also observed that these skills - self-determination, problem-solving, optimism, and flexibility among others - were identified as essential to professional success by deaf adults. Again, this is accounted for in the model of transition planning put forth by Punch and Duncan (2020).

Participants in this study did not report many academic struggles. When they did describe a challenge, it was presented as not too serious, as participants expressed they felt academically prepared for college. Where they expressed surprise was around the expectations of college professors as opposed to high school teachers. In college, the students were expected to maintain their own schedules and keep up with

assignments without a lot of additional prompting from the instructor. In high school, teachers provided reminders of when things were due and offered more individualized support. This would be another area where secondary transition teams could fade support gradually so that students have an opportunity to practice those self-management skills. On the postsecondary level, instructors working with first-year students could provide additional scaffolding initially and wean them away as students become accustomed to working independently.

Another factor that facilitated participants' successful transition to college was leveraging networks. Schlossberg's (1981) model also highlights how transitioning often requires adults to develop "new relational networks" (p.3) and even a new way of seeing themselves. Students who had participated in deaf extracurricular programs before arriving at college were able to develop networks and as a result experienced an easier transition into the social fabric of the campus. Punch and Duncan (2020) particularly highlight the importance of deaf role models being included in the transition process to help build the social capital for navigating post-secondary spaces. Mentoring programs such as this can connect students to the institution and develop a feeling of belonging, while also sharing ways to navigate the system (Tinto, 2012).

Limitations and Implications for Future Research

This exploratory qualitative study looked at the experiences of first-year deaf college students as they transitioned to college. The limitations of the present study are notably the small sample from a specific population in a particular context. However, our attempt was to explore what the transition experience was like for deaf students at a deaf university where communication barriers are minimized. This is not the college experience that most deaf students have, but it gave an opportunity to explore transition without being mired in communication frustrations.

Additionally, participants volunteered to participate in this study, thus results cannot be applied to all students who are deaf. Finally, since not all participants completed the journals, the triangulation of data was not as consistent as would have been preferred.

Future research could expand the sample size and recruit participants from various colleges with sizable deaf student bodies. This study can provide a foundation on which to include the communication barriers that likely exist in other universities and build a fuller picture of the experiences of deaf first-year college students.

Implications for Practice

Secondary schools preparing students for college may use this study to inform transition planning. Participants in this

study did not mention their transition plans even when asked about specific transition preparation, which raises questions about whether the process is meaningful to them. Transition planning needs to be more impactful and target practical skills. For example, participants experienced the most struggle in learning how to manage time and set priorities independently, both of which require strong executive functioning skills. Development of transitioning skills is not the sole responsibility of high schools; colleges can also build in systematic support for new students. These skills are so important to adult life, it is hard to imagine a scenario where they are not relevant. Thus, it is imperative that college students continue to build on their ability to make decisions, manage projects, and self-monitor for understanding.

Additionally, dual enrollment programs would allow students to take college courses while still in high school, thus learning how college classes and professors function. It is a good way for high school students to have support in the transition to more independence, and students can adjust their expectations for college based on these earlier experiences. On their end, colleges can provide the academic and social mentoring that students need to make this transition smoother.

Conclusion

We explored the transition experiences of deaf freshmen at a deaf university. Participants described factors related to adulting more than academics. Participants found ways to mitigate and overcome the challenges they faced, which made them feel optimistic about their independence. This is an exploratory study with an emerging conceptual framework that requires further testing. However, present results correlate or parallel previous research.

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Relationship between Executive Functioning, Cognitive Load, Inclusive Teaching Strategies, and Ratings of Teaching Effectiveness

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Students from diverse academic, cultural, disability, and socio-economic backgrounds are enrolling in postsecondary settings at higher rates. Concurrently, postsecondary faculty are increasingly mindful of how to design accessible classroom learning environments for students with a wide range of characteristics and backgrounds. This attention to accessible teaching and learning is a key component of educational effectiveness and equity. Inclusive teaching strategies have the potential to reduce extraneous obstacles for students and increase access to the content of classroom instruction. The current study utilized exploratory factor and path analyses to examine relationships between student executive function, perceived cognitive load, accessible teaching strategies, and course instructor ratings. Results of the study indicated relationships were found between constructs of cognitive load and inclusive approaches to assignment logistics, and cognitive load and ratings of teaching effectiveness. Results are discussed within the context of possible considerations for faculty in the design of their classroom activities and contributions to student rating of teaching effectiveness.

Keywords: Inclusion, Cognitive Load, Teaching, Observation, Faculty Development

Equity in education is oftentimes best understood within the contexts of equal outcomes and opportunities for academic growth (Neito, 1996). Within higher education, educational equity is quite complex with systems interactions at many levels with societal, cultural, familial and individual student factors, to name a few (Junor & Usher, 2002). Unlike secondary education, postsecondary education and training is not compulsory, and thus not protected in the same manner as elementary and secondary education. And yet access to postsecondary education and training can yield several benefits: higher salaries, helping to shape the future, and reduction of economic disparity for underserved populations (National Center on Education Statistics, 2011). In fact, college enrollment and completion are two of the most important factors that determine an individual's earning power over the course of a lifetime. For example, males who completed a bachelor's degree were more likely to be employed and earn significantly more than those with only a high school diploma, with a median salary of $63,700 vs. $40,060 for the two groups, respectively (National Center on Education Statistics, 2011). Completion of postsecondary education and training is thus a potential strategy to address socioeconomic inequities in historically underserved populations.

Accessible Instructional Strategies

Unfortunately, only half of students who enter a four-year institution will complete a bachelor's degree, an attrition rate that represents loss opportunities for students and is an indicator of systemic barriers to degree completion (Kuh et al., 2011; National Center on Education Statistics, 2012). Although there are many factors that contribute to drop out rates in postsecondary education and training (Tinto, 2012), the degree to which students from diverse backgrounds can gain access to the content of instruction has been the focus of increasing discussion over the past decade. Traditional approaches to instruction focus on faculty lecturing, minimal student engagement, and assignments that are decontextualized and removed from the life experiences of students. Universal Design for Learning (UDL), in contrast, provides principles that seek to meet the needs of the community of learners while focusing on access for individual learners (Rose et al., 2006). UDL strategies focus on flexibility and different approaches to learning, such as assignment

alternatives, testing options, and/or adaptations to meet the challenge of expanding access for the diverse set of postsecondary learners. In the Higher Education Opportunity Act (Pub L 110-315, August 2008), Congress defines UDL as:

> A scientifically valid framework for guiding educational practice that –
>> (a) provides flexibility in the ways information is presented, students respond or demonstrate knowledge and skills, and students are engaged; and
>> (b) reduces barriers in instruction, provides appropriate accommodations, supports, and challenges, and maintains high achievement expectations for all students, including students with disabilities and students who are limited English proficient (p. 122 Statute 3088).

UDL requires intentionality in how students engage with course material. For example, in a classroom with group activities, a faculty member can make choices about how students communicate with each other during class in a way that facilitates best practices with interpreters. Furthermore, activities can leverage the resources of technology, such as live chat rooms for discussions or use of a collaborative cloud file to document information reviewed in class. This shift in pedagogy is sometimes subtle, such as providing students time for self-paced review of the visual materials before providing "live" expansion and elaboration by the faculty member in a lecture format. And yet the UDL approach is also one of a change in attitude, not just practice. UDL encourages faculty to be mindful, positive, and creative about their classroom and how they communicate information.

It is equally important to understand how principles and outcomes of UDL strategies are implemented, maintained, and measured across various systems. In fact, previous research identified four areas of concern from the perspectives of disabled students and their parents, which include (a) inaccessible physical structures, (b) negative educator attitudes towards disability, (c) limited educator knowledge, and (d) a lack of inclusive education policy (Pivik, McComas, & Laflamme, 2002). Such findings highlight the importance of recognizing a systems-level approach to producing active educational change. For example, students in higher education most often interface with their instructor, who typically structures the classroom, makes academic decisions, and evaluates student performance. Whether or not the instructor adopts inclusive teaching strategies depends on various individual factors, namely personal beliefs, experience with disabled students, and perspectives on diversity (Aragon, Dovidio, & Graham, 2016; Crowson & Brandes, 2014). More specifically, educators who endorsed a diversity ideology that ignored/downplayed differences in gender or color were less

likely to adopt inclusive teaching strategies than educators who recognized and embraced student differences (Aragon et al., 2016). That said, educators' attitudes are predicted by factors at the institutional level, including workplace stress and access to training opportunities, the latter of which are often limited due to inadequate time or resources, as well as the absence of a legal mandate for UDL implementation (Galaterou & Antoniou, 2017; Lombardi, Murray, & Dallas, 2013; Raue & Lewis, 2011). Furthermore, even in the context of positive attitudes towards inclusive learning and disabled students, faculty do not consistently implement UDL strategies intheir classroom, often citing a lack of experience or knowledge of these principles (Lombardi, Vukovic, & Sala-Bars, 2015).

These aforementioned findings recognize the importance of intensive and accessible educator training to shape attitudes, knowledge, and skills related to UDL implementation. The benefits also extend to the educators themselves; after receipt of UDL and diversity training, instructors report increased self-efficacy, perceived social/institutional support, understanding of their students, and job satisfaction (Katz, 2015). Taken together, the confluence of the individual, institutional, and state/federal level affect whether educators adopt UDL principles into their classroom. However, students themselves are a sorely under-used resource in postsecondary settings, and there is scant research related to their perspectives on inclusive learning (Gardebo & Wiggberg, 2012). This is concerning, as the curricular or pedagogical development of a classroom could certainly benefit from the experiences of those who are educated in these spaces. To this end, the present study contributes to the developing literature base by examining the student-reported impact of inclusive learning in higher education settings.

Role of Cognitive Load in Accessible Instruction

One of the goals of inclusive teaching, including those approaches that follow UDL, is to reduce extraneous work that students need to do in order to access the actual content of instruction. Inclusive teaching is thus intricately related to how students retrieve and process information in the learning environment. Cognitive Load Theory, as posited by Sweller and colleagues (Paas et al., 2003; Paas & Sweller, 2014; Sweller et al., 2011), focuses on the relationship between academic tasks and the cognitive demand on students.

Cognitive load relies on the idea that all tasks impose demands on a learner's cognitive system (Sweller, 1999). Independent tasks that can be processed one at a time require low cognitive load; tasks with multiple elements that are interrelated and must be processed simultaneously require high

cognitive load (Van Merrienboer & Sweller, 2005). Furthermore, there are different types of cognitive load, some that are mutable and some that are not (Paas, et al., 2003). *Intrinsic* cognitive load is inherent to the content itself and thought not to be alterable by assessment design (i.e., aligned with student's proficiency with the target skill). *Extraneous* cognitive load, on the other hand, refers to demand that is due to how the information is presented during assessment (i.e., what is navigated by a student's access skills). Finally, the *germane* load consists of the cognitive resources needed to construct new knowledge and integrate it into one's cognitive schema. A learner has a finite cognitive capacity to perform a task: depending on task demands, the sum of the intrinsic, extraneous, and germane load can either be the limit or even, at times, exceed the cognitive capacity available to perform a particular task.

Reducing extraneous cognitive load that puts demands on working memory so as to primarily activate intrinsic cognitive load can be achieved through specific pedagogical choices. For example, the complexity of language on test items becomes a potential extraneous cognitive load in content assessments (e.g., mathematics and science) where reading is not the targeted skill (Abedi et al., 2005). One strategy for reducing extraneous load in this condition may be to offer the student a glossary of vocabulary not directly related to the test item content. Measures from studies of cognitive load in online learning environments serve as potential starting points for study of their application in postsecondary classrooms with diverse learners. The concept (but not the direct measurement) of cognitive load for students with disabilities has been applied to frameworks for developing accessible assessments for students with disabilities (Elliott et al., 2010).

Executive Functioning, Cognitive Load, and Inclusive Teaching Practices

Conversations centered on the relationship between inclusive instruction and cognitive load typically focus on visible measures of engagement or teaching practice. Yet for many students in postsecondary education, a high degree of executive functioning is required to manage the large amount of information input, make decisions about how to use that information, and then again how to express one's understanding and application in high-demand performance tasks such as a final exam or project. Executive functioning, generally, refers to an individual's ability to guide, direct, and manage cognitive, emotional, and behavioral functioning (Diamond, 2013). From a specific neurological perspective, executive functioning centers on the frontal lobe (Duncan et al.,1995; Miyake et al., 2000). Diamond (2013) discusses three core executive functions: Working memory, inhibitory control

(e.g., behavioral inhibition, cognitive inhibition, and selective attention), and cognitive flexibility (e.g., adapting to the changing demands or priorities.

The connection to cognitive load theory is a complex but an important one. Learning new material is supported by all three areas of executive functioning (Schwaighofer et al., 2017). When cognitive load surpasses an individual's working memory capacity, such as environments where recognition is difficult, knowledge is not readily available, or there is a high demand for attention and effort this can introduce different and unintended behavior (Kalyuga, 2007). Differences in working memory capacity have been associated with fluctuation in multiple complex learning outcomes. Specifically, working memory is correlated with reading comprehension, math and chemistry achievement, and problem solving (Schwaighofer, et al., 2017). One study considered how students' executive functions are advanced through UDL principles, guidelines, and checkpoints. García-Campos and colleagues (2018) conclude that by supporting specific executive functions identified (e.g., working memory and abstract reasoning) through the implementation of specific UDL strategies, teachers create opportunities for the entire class and increase student involvement. These findings call upon both the institution and faculty to consider strategies in order to ensure accessibility, which may in turn reduce the cognitive load of students and potentially improve their learning experience.

Purpose of this Study

Gaining access to the content of course instruction is a complex process, one that includes student, faculty, and systemic factors. Furthermore, teaching effectiveness is an elusive outcome to measure, as are the predictors of teaching success. Longitudinal data with indicators of teaching effectiveness as measured by student success in both academic and applied experiences after the end of their coursework are rarely available. This study sought to explore the potential relationship between student processing of information, teaching strategies, and teaching effectiveness. More specifically, this study investigated the relationships between executive function, cognitive load, accessible teaching strategies, and course instructor ratings at a large public university through a path analysis. It is proposed that student levels of executive functioning and accessible teaching strategies have a direct effect on levels of experienced cognitive load, and that levels of cognitive load and accessible teaching strategies, in turn, will both have an effect on course instructor ratings.

Methods

Procedure

Students took a pre-screening survey for all studies that were a part of the university research subject pool and then

had the opportunity to choose from a list of available studies, including the current study. Participants were recruited from February to April 2017. Eligibility requirements included: (a) 18 years of age or older (b) enrolled in a course with a Subject Pool requirement (c) did not have a registered disability (see below). Once participants registered for the current study, they were able to click on a link that took them to the Qualtrics survey platform, where they were given a consent form that described the nature of the study. Participants were able to decline upon reading the form and at any point during the survey without penalty. The survey took approximately one hour to complete, and participants received one credit for their time. The study was reviewed and approved by the university's Institutional Review Board.

Participants

Study participants were 271 undergraduate students at a large public university who were enrolled in one of a number of courses within the College of Education with a research participation option to fulfill course requirements. The demographics of the study participants are provided in Table 1. A total of 65% of the sample was female, 41% were 20 years old or younger, and 84% of the sample spoke English as their native language. Only 21% of the sample was fluent in a language other than their native language, while a very large proportion (42%) of the sample was conversant in another language. Also, only 4.8% of the sample was registered with the office for student disabilities; since this potentially represented a qualitatively different group of students than students without a disclosed disability, these individuals were omitted from the remaining analyses. For confidentiality reasons, students did not report their ethnicity.

Of these demographic variables, ten were used as covariates in the path analysis. The first three of these included the number of semesters the student was enrolled at the university, the student's age in years, and the student's major. An indicator variable for being male was included, as well as indicator variables for students who were only fluent in English, Spanish, and Chinese languages, and an indicator variable for students who were conversant in at least one other language. The last indicator variable denoted whether the student had gone to high school in the United States for at least one year. The final covariate included the approximate number of books the student read in the past 12 months.

Independent Variables

The independent variables included a variety of factors obtained from the LEAF, an instrument designed to measure executive functioning (Kronenberger, Castellanos, & Pisoni,

2018). Fifty-five items were intended to assess eight cognitive and three academic domains. These cognitive domains were comprehension and conceptual learning, factual memory, attention, processing speed, visual-spatial organization, sustained sequential processing, working memory/processing complex information, and novel problem solving and learning. The academic domains were mathematics skills, basic reading skills, and written expression skills. Internal consistency for all LEAF subscales measured 0.79 or higher with the exception of the visual-spatial organization subscale (Castellanos, Kronenberger, & Pisoni, 2018). Test-retest reliability ranged from 0.74 – 0.88 across all subscales (Castellanos, et al., 2018). However, all these purported domains were for an entirely different sample than the sample in the current study. Ensuring the construct validity of the path analysis involved estimating a set of exploratory factor analyses (described in the results section), which found factors that were slightly distinct from the domains listed above.

Mediators

Two other instruments were included as possible mediators in the path analysis. The first instrument was a cognitive load measure, adapted from Leppink et al. (2013), including 12 items intended to measure the difficulty, clarity, and helpfulness of the learning activities in class. Test-retest reliability ranged from 0.71 – 0.94, and the internal consistency for the scales measured between 0.80 – 0.89 (Leppink et al., 2013). The other instrument was a ratings of strategies measure, which was created for this study. Students rated, on a ten-point scale, the degree to which certain teaching strategies helped their learning experience. The items in this adapted instrument are included in Appendix A. Both of these measures were also subjected to exploratory factor analysis to ensure construct validity prior to path analysis.

Dependent variable

The dependent variable was a standard course-instructor survey used at the University of Texas at Austin. The wordings of these six items were altered somewhat, since the survey was administered mid-semester, rather than at the end of the semester. Since the wording was altered, this dependent variable was also subject to exploratory factor analysis.

Analysis Plan

Analysis proceeded in two steps. In the first step, a set of exploratory factor analyses were conducted to ensure the construct validity of the independent variables, the mediating variables, and the dependent variable. Once the factor structure was established, factors were parceled by taking the

Table 1. *Demographic and descriptive statistics*

Variable	Percentage
Female	65.3
Number of years in postsecondary education	
1	1.0
2	3.4
3	19.6
4	23.7
5	37.1
6 or more	7.1
Number of semesters at UT	
1	8.6
2	0.7
3	22.3
4	2.4
5	19.9
6	2.1
7	26.5
8	2.7
9+	6.8
Age	
18	4.1
19	16.5
20	20.6
21	32.0
22	12.4
23	2.4
24+	3.3
Is a veteran	1.0
Native language is…	
English	84.2
Spanish	8.6
Chinese	4.1
Sign Language	0.3
Hindi	1.0
Korean	1.0
Urdu	1.0
Vietnamese	2.1
Other	4.5
Is fluent in another language	21.3
English	3.2
Spanish	4.8
American Sign Language	0.3
Indian languages	4.9
Other Asian languages	1.9
Middle-Eastern languages	0.6
Is conversant in another language	41.6
English	1.3
Spanish	16.5
American Sign Language	3.3
Indian languages	5.3
Other Asian languages	6.3
French	3.7
German	1.7
Number of books read in the last year	
1-10	66.0
11-20	18.6
21-30	5.5
31-40	0.3
61+	1.0
Went to high school in the U.S. for at least one year	89.3
Had an IEP/ARD/504 plan or other formal accommodations	2.1
Is registered with Office of Student Disabilities for accommodations	4.8
Requested accommodations	4.8

average of each item that loaded 0.4 or greater onto the factor (Stevens, 2009). Given the complexity of the model, shown in Figure 1, compared to the sample size of 271, parceling was used to increase the estimation stability of the solution (Matsunaga, 2008). Additionally, since exploratory factor analyses were conducted in the first step, the threat of multidimensionality on parceling was less severe (Matsunaga, 2008).

In the second step, a path analysis was conducted. In the path analysis, the independent variables had direct effects with the mediating variables and the dependent variable, while the mediating variables only had direct effects on the dependent variable. Mediating variables were allowed to correlate with each other, and covariates were allowed to co-vary with every variable in the analysis. Finally, indirect effects from the independent variables to the dependent variable through the mediating variables were estimated. A visual representation of this path analysis may be found in Figure 1.

Results

Step one: Exploratory Factor Analyses

Overview

A similar procedure was followed for each of the following factor analyses. First, a principal components analysis, using an oblimin rotation, was conducted to determine the overall number of factors to retain. The determination of this was based on the use of a scree plot and Kaiser's rule, along with overall interpretability (Henson & Roberts, 2006). After the number of factors was decided, factors were named assuming that items which loaded 0.4 or greater were associated with that factor (Stevens, 2012).

Exploratory factor analysis for the LEAF

Overall, the exploratory factor analysis for the LEAF indicated that the items in the present dataset followed the factor structure in the original publication (Kronenberger et al., 2018). However, there were some differences in that certain questions cross-loaded, and certain factors were combined. The scree plot for this factor structure may be found in Figure 2. While the scree test indicated that only two factors may be retained, Kaiser's rule suggested that eight factors could be retained. The two-factor solution, which is not printed here for parsimony, had a first factor onto which 42 out of 55 items loaded, and a second factor onto which reading and writing related items loaded. We found the eight-factor solution to be more interpretable, and more related to the original publication (Kronenberger et al., 2018). A listing of loadings for the eight-factor solution may be found in Appendix B. The eight-factor solution explained 63.96% of the total variance in the LEAF items, while the two-factor solution explained 41.70% of the total variance in the LEAF items.

Most of the factors corresponded rather directly to those found in the original work (Kronenberger et al., 2018), and so only those factors that were collapsed are reported here. The first factor included questions relating to two academic content areas, written expression skills and basic reading skills, called WE and RD in the original publication using this measure. So, for the present study, the first factor was named Reading/Writing to reflect this combination. Also, questions from the comprehension and conceptual learning (CC) and novel problem solving (NP) cognitive domains loaded onto a single factor, which we named Unfamiliar Content for the present work. Finally, questions from the processing speed (PS) and working memory (WM) cognitive domains both loaded onto a factor we named Working Slowly.

Exploratory factor analysis for the cognitive load measure

The scree plot in Figure 3 suggests a four-factor solution for the cognitive load measure. Since additional items from the original Leppnik et al. (2013) were included in the present work, the scree test was followed directly. We named the factors clarity, complexity, assignment utility, and content familiarity. See Table 2 for more detail on the factor loadings. The four-factor solution explained 76.32% of the total variance in the 12 items.

Exploratory factor analysis for the ratings of strategies measure

This original questionnaire had four factors, according to the scree test. The four factors explained 56.72% of the variance in the sixteen items. The scree plot may be found in Figure 4. Each factor loaded onto between three and six of the original sixteen items. We named the factors extra time to view lectures, longer duration assignments, briefer assignments, and visual material during lectures. More detail on the factor structure may be found in Table 3.
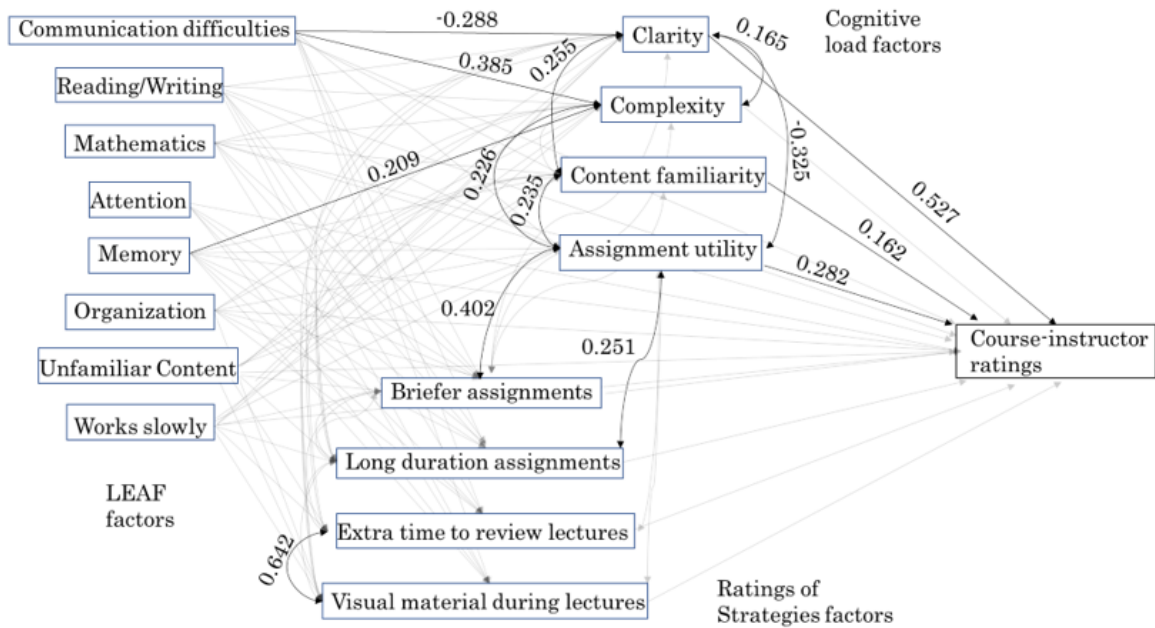

Figure 1. *Path diagram for the path analysis.* For the sake of parsimony, only effects significant at the 0.01 level are reported, however, the partly transparent paths were all estimated.
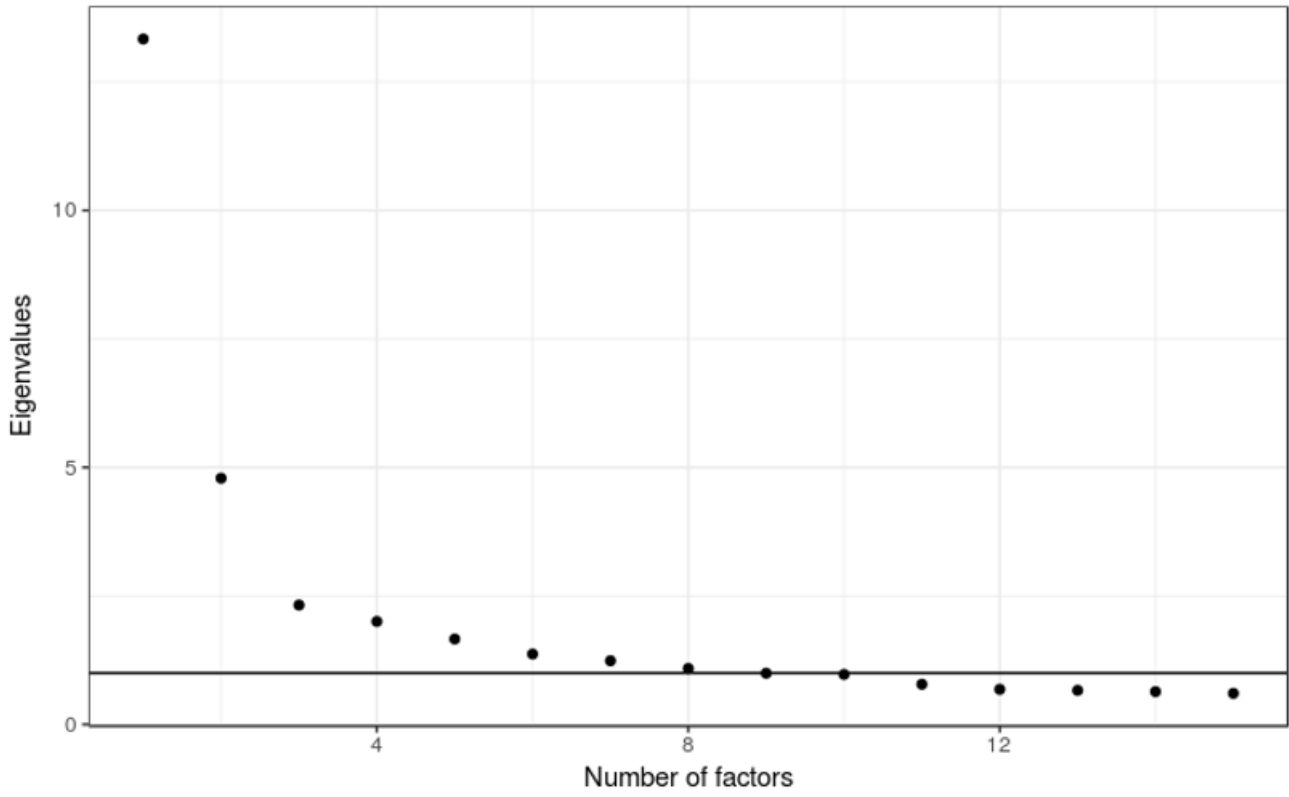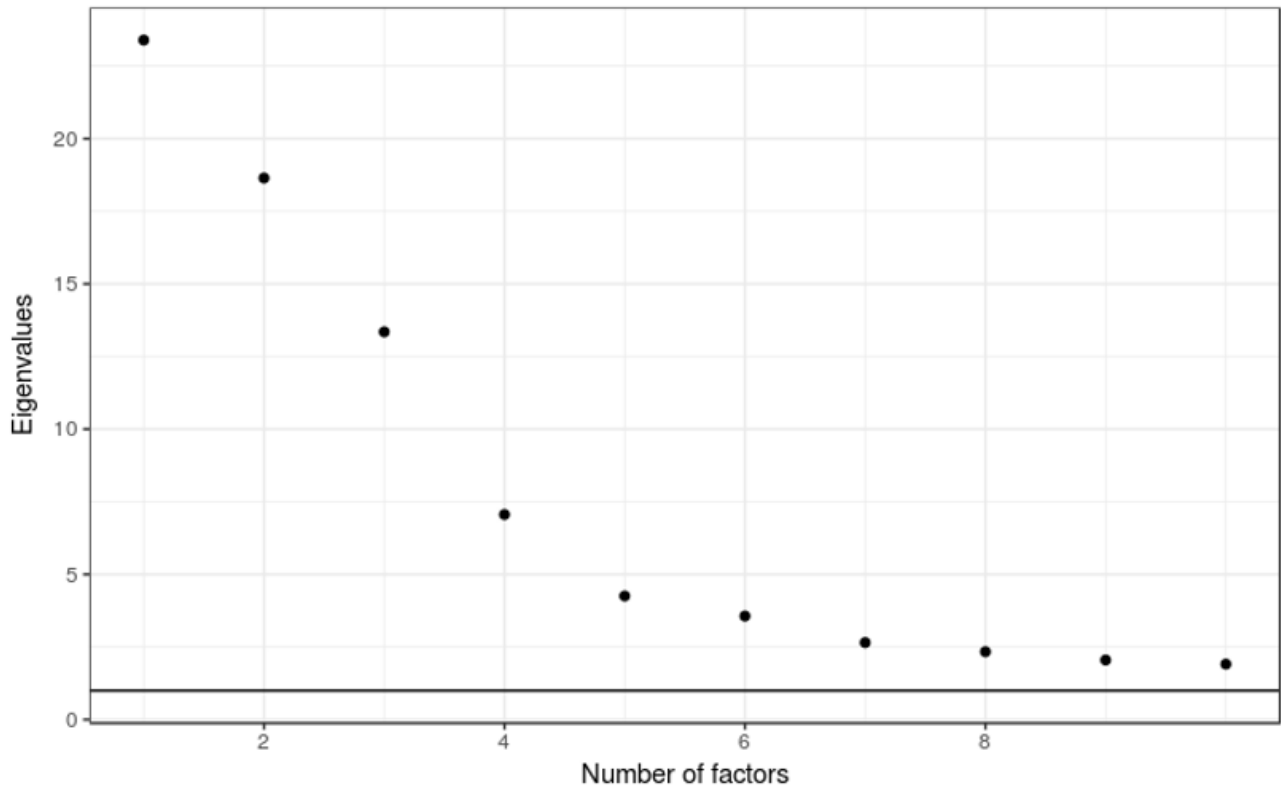
Figure 2. *LEAF principal components scree plot.*

Figure 3. *Cognitive load scree plot.*

Table 2. *Factor loadings for the Cognitive Load measure*

Item	Clarity	Complexity	Assignment utility	Content familiarity
Content is familiar				0.9207
Content similar to previous classes				0.8662
Comfortable with content	-0.505			0.4561
Content is complex		0.9123		
Activities are complex		0.8626		
Concepts are complex		0.9126		
Unclear directions	0.8529			
Examples not useful	0.8415			
Confusing presentations	0.8707			
Useful homework			0.9171	
Useful activities			0.8865	
Exams help me learn			0.6025	

Note. For the sake of parsimony, only factor loadings greater than 0.4 in absolute value are reported here.
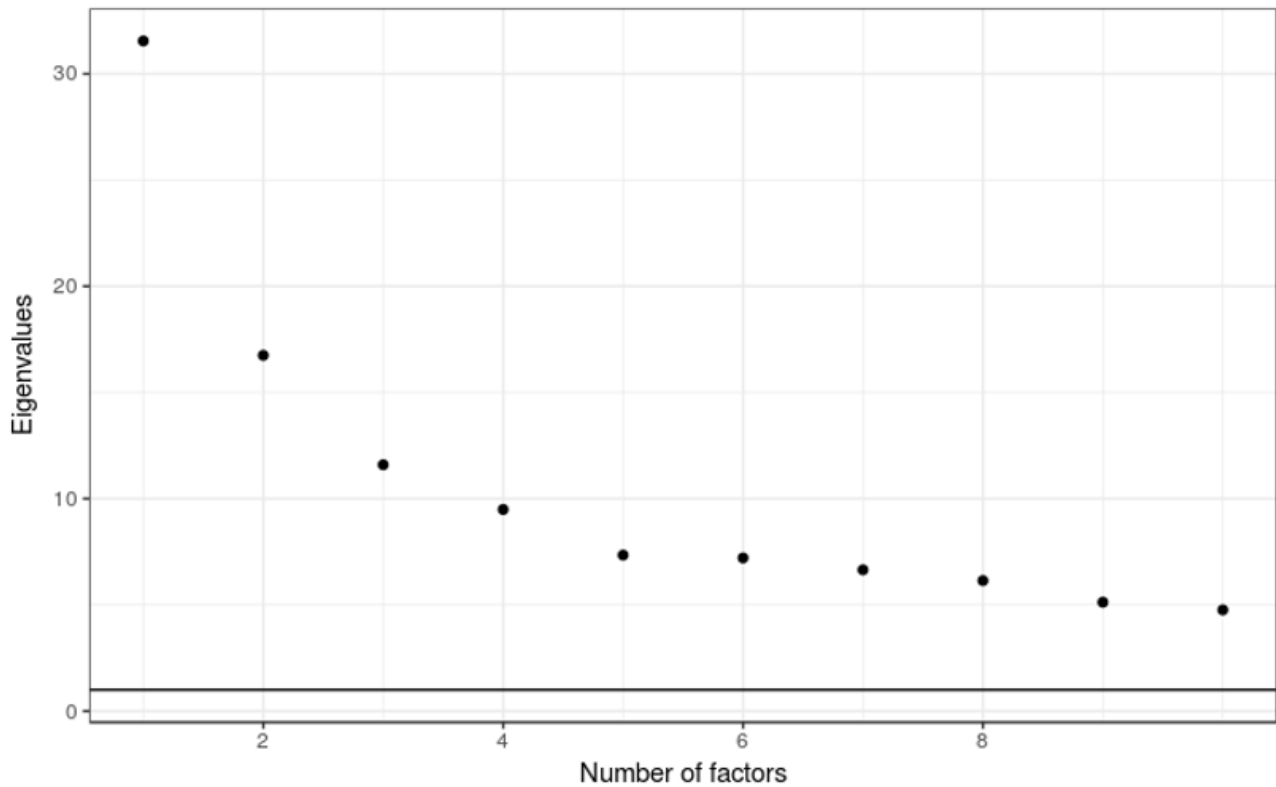

Figure 4. *Scree plot for the ratings of strategies measure.*

Table 3. *Factor loadings for the Ratings of Strategies measure*

Item	Extra time to review lectures	Longer duration assignments	Visual material during lectures	Briefer assignments
Quizzes				0.6215
Small projects		0.7297		
Short frequent reading assignments				0.5775
In class exams				0.7769
Take home exams				
Out-class group assignments		0.8397		
In-class group assignments		0.7384		
Captioned videos			0.7964	
Graphics			0.7054	
Online discussion		0.4673		
Pre-class PowerPoints	0.4471		0.5536	
Pre-class lecture outlines	0.4451		0.5666	
Daily objectives	0.5826			
Thinking time after questions	0.7221			
Thinking time for PowerPoints	0.8632			
Thinking time for class activities	0.798			

Note. For the sake of parsimony, only factor loadings greater than 0.4 in absolute value are reported here.

Exploratory factor analysis for the Course-Instructor Survey

Both Kaiser's rule and the scree test indicated unidimensionality for the course instructor survey (CIS). Figure 5 displays the scree plot. Every item loaded 0.4 or greater onto the single factor. More detail on the factor loadings may be found in Table 4.

Step two: Path analysis

Overview

As described above, the path analysis involved regressing the dependent variable, the course-instructor survey, on the moderators, covariates, and independent variables. The moderators, which included four factors from the cognitive load measure and four factors from the ratings of strategies measure, were also regressed on the independent variables and the covariates. Finally, the independent variables, the eight LEAF factors, were regressed on the covariates. The moderating variables were allowed to correlate with each other. A summary of all statistically significant direct effects and correlations may be found in Figure 1.

Fit statistics

The chi-square test of model fit was statistically significant, overall [(54) = 190.90, $p < 0.001$], which indicates poor fit; however χ^2 this fit index is sensitive to power (Keith, 2014). The CFI was 0.952, while the SRMR was 0.032, which, together, indicate the model fit the data adequately (Hu & Bentler, 1999). On the other hand, the TLI was 0.791; the TLI is an index which penalizes more heavily for non-parsimonious models (Keith, 2014).

Summary of significant indirect effects

With eight independent variables and eight moderators, a total of sixty-four indirect effects were tested, but only one was statistically significant at an alpha level of 0.01. The clarity factor of the cognitive load questionnaire moderated the effect of self-reported communication difficulties on the course-instructor survey ($\beta = -0.152$, $z = 3.632$, $p < 0.001$). The effect size is moderate to large, for an indirect effect (Pituch et al., 2006).

Summary of significant direct effects

The only significant effects on the course-instructor survey were from the cognitive load factors. Specifically, a lack of clarity has a moderately strong negative effect on the course-instructor survey; students who rated their teachers one
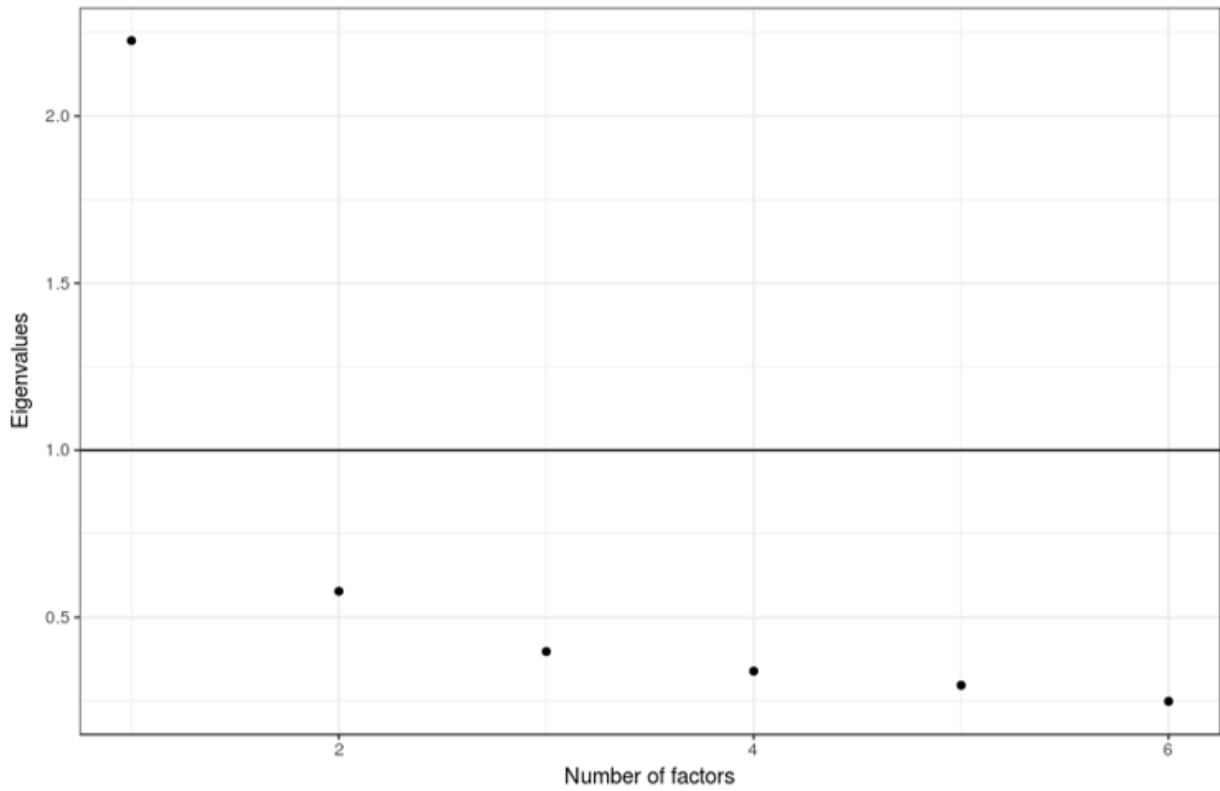
Figure 5. *Course-instructor survey scree plot.*

Table 4. *Factor loadings for the course-instructor survey*

Prompt	Loading
The course is well organized.	0.762
The instructor communicates effectively.	0.821
The instructor shows interest in the progress of students	0.793
The tests/assignments are usually graded and returned properly.	0.466
The instructor makes me feel free to ask questions, disagree, and express my ideas.	0.769
At this point in time, I feel that the course will be (or has already been) of value to me.	0.738

standard-deviation more unclear rated the instructors 0.527 standard deviations lower on the CIS (z = -9.810, p < 0.001). Also, useful class assignments had a modest, but meaningful effect on the CIS; students who had a 1-standard deviation higher rating of the utility of the assignments on the cognitive load measure rated the instructors 0.282 standard deviations higher on the CIS (*z* = 4.997, *p* < 0.001). Finally, there was a statistically significant, but practically minor effect of content familiarity on the CIS. Students who rated themselves as 1 standard deviation higher on content familiarity for the course rated the instructors only 0.162 standard deviations higher (*z* = 3.30, *p* < 0.002).

The independent variables, particularly, the LEAF factors, significantly impacted certain cognitive load factors, but not ratings of strategies factors. A one-standard-deviation increase in memory problems reported on the LEAF was associated with a 0.209 standard-deviation increase in the reported complexity of the class, a small but meaningful effect (*z* = 2.754, *p* < 0.01). Also, a one-standard-deviation increase in communication problems reported on the LEAF increased the reported complexity of the class by 0.385 standard deviations, a small-to-moderate effect (*z* = 5.078, *p* < 0.001). Finally, a one-standard-deviation increase in communication problems was also associated with a reported lack of clarity in the cognitive load measure (β = 0.288, *z* = 3.910, *p* < 0.001).

Summary of correlations between constructs

There were surprisingly few significant relationships between the constructs. Students who rated the assignments as useful on the cognitive load measure tended to report that they benefited more from brief assignments like quizzes (β = 0.402, *z* = 6.03, *p* < 0.001) and also that they benefited more from longer assignments like class projects (β = 0.251, *z* = 3.582, *p* < 0.001). In other words, students who self-report that assignments are useful believe that they benefit from those assignments, regardless of what sort of assignments they are. These correlations were the only significant relationships between the cognitive load measure and the ratings of strategies measure.

Naturally, certain cognitive load factors correlated with other cognitive load factors, and certain strategy factors correlated with other strategy measures. These factors were drawn from the same scale and are not assumed to be orthogonal. Details on those correlations can be found in Figure 1.

Discussion

The relationship between accessible classroom environments, faculty characteristics, and student characteristics is quite complex. This discussion section addresses some limitations of the study, a discussion of the

measures utilized, and implications of the findings for both research and practice.

Study Limitations

The current research was limited by the sample of students which came from one public four-year university taking courses within the College of Education. As such, the characteristics of this learning environment may not be generalizable to other settings, subject areas, or types of institutions. Challenges in generalizability extend to the student participants in the study. To protect the confidentiality of student participants, ethnicity was not reported. Ethnicity may have been helpful information to determine sample representativeness within the overall university population. The study also did not have enough students with disclosed disabilities to allow for a comparison group or disaggregated analysis between those students with and without disclosed disabilities. Future research should allow for students to describe a broader range of disability-related characteristics. Self-report measures, in lieu of other more direct measures of cognitive load and executive functioning, are a second potential limitation to this study. While the study included exploratory factor analyses and measures of path model fit to inform evaluation of the statistical approaches, more proximal measures of the study constructs may have resulted in different findings about their relationships to each other. Finally, for the teaching effectiveness measure, specifically, there is an intense debate in the field regarding the use of student evaluations as a measure of teaching effectiveness (Lopez-Pastor & Sicilia-Camacho, 2015; Marsh, 1984). Furthermore, the timing of the survey meant that students were rating faculty on only a portion of the teaching-learning experience. Although the students had at least 2 months of exposure to the classroom practices prior to taking the teaching effectiveness survey, there could be culminating learning experiences that were not yet a part of their understanding and conceptualization of the faculty members' effectiveness.

Study Measures

This study included exploratory factor analyses for several of the measures included in the study to confirm that they could be used in the subsequent path analysis. This was especially critical for the inclusive teaching strategies measure that was developed specifically for this study. While exploratory factor analysis yielded satisfactory construct validity for the purposes of this study, this measure has not been examined with other populations or in other settings. Further inquiry into its psychometric properties and potential applications is warranted. The LEAF and cognitive load measures, while used previously in research, have not been

normed or tested with college-aged students. Rather, especially with the LEAF, clinical populations such as those seeking psychological evaluations were part of the sample in which the psychometric analysis was conducted. The present paper's use of the LEAF and cognitive load measures with college students without disabilities or who may potentially be a member of a clinical population, may also be an area of future study. This would ensure that the LEAF and cognitive load measures are useful instruments when performing research in a postsecondary environment.

Role of Cognitive Load

Significant direct effects in this study were only noted for cognitive load factors. Students who perceived their instructors as unclear were more likely to produce a lower rating on the CIS. When information is not presented in an easily comprehensible manner, the basic transaction between faculty and students is compromised. Students also reported a relationship between the cognitive load factor of "assignment utility" and their ratings of two of the inclusive teaching strategies related to assignment length and timing. Students seem to associate the degree to which an assignment was useful with logistics and format of an assignment. It appears that, for cognitive load factors, items related to communication and the type of course activities are most salient in this model. Most importantly for improving the quality of instruction, both of these are malleable and can be responsive to intervention by a faculty development opportunity or peer feedback.

Predictors of Teaching Effectiveness

In addition to cognitive load, higher ratings of teaching effectiveness were indicated by useful class assignments and content familiarity. This was also indicated when examining correlations between constructs, as students who believed the assignments were useful reported benefitting from the assignments regardless of the assignment type. Taken together, these particular findings indicate that students value assignments that are clear, increase their understanding of the course material, and are germane to the content being taught. Deviating from these strategies (i.e., assigning "busy work") may increase negative student views of the class, making them at-risk for decreased motivation and willingness to engage in the course. While there were no direct effects of executive functioning and ratings of teaching effectiveness, there was a relationship between working memory (within executive functioning) and complex content. This relationship makes sense, given that more complex assignments and content are likely to require a higher degree of working memory to complete. Faculty may want to be particularly attentive to the degree to which complex assignment formats are necessary for students to demonstrate their understanding of the content. For

students who may not have access to high levels of working memory, which can occur for many reasons (e.g., inability to attend to information for extended periods of time, recall multi-step directions, and low impulse control), reducing unnecessary assignment complexity may support more equitable learning experiences for diverse students.

Recommendations for Research and Practice

Research concerning educational effectiveness and equity has steadily increased over time; postsecondary faculty have, as a result, become progressively mindful about designing accessible learning environments for students. However, attrition rates have remained static for students attending four-year institutions, indicating that existing supports for students in their degree completion may not be sufficient. Postsecondary dropouts can be attributed to many different factors but shifting the focus towards increasing student's ability to gain access to the content of instruction holds promise. Replication studies that take these variables and explore them further in different course contexts and postsecondary settings is warranted. We especially recommend a focus on courses that have high rates of students who receive a D, F, or who withdraw all together, to see what impact inclusive teaching strategies may have on courses that seem to be challenging environments for students. Further research into specific accessibility strategies as well as their relationship with learning, course progression, and degree completion is needed. The day-to-day activities in the classroom may not seem to have a direct relationship with decisions to stay or leave postsecondary training. However, there may be cumulative preventative effects of accessible teaching strategies, perceived inclusivity, and reduced extraneous load for students who already may have to work harder than their peers due to systemic barriers in education, more generally. The role of teaching approaches, and the attitudes that they reflect, may play a significant role in the overall climate of support.

Our findings contribute further insight about cognitive load, working memory, and teaching effectiveness and encourage the creation of alternative teaching strategies for inclusive education. Findings such as these could be incorporated into concrete recommendations for faculty professional development, either at hire or later into their tenure. One possible consideration for faculty when designing coursework is the format of assignments. Creating assignments that capture both the main course objectives and increase understanding by being applicable and relevant to various fields of study is one strategy to engage students. Assignments that are structured and clear but allow students to flexibly incorporate their own interests may increase motivation and engagement. Although mastery of specific

content needs to be demonstrated for valid measurement of student knowledge or skills, the level of intricacy required during the assignment needs to be considered as well. There are times when having support tools may allow students to successfully complete more complex tasks. For example, faculty might permit students to bring an external aid to exams (e.g., one note card) or provide a handout for assignments with key information to support the comprehension of patterns, critical features, and relationships. Finally, it can be important for faculty to ask students to complete mid-semester feedback in order to tailor the remainder of the course by including additional strategies suggested to ensure that course objectives are being achieved. Shifting the focus to proactively create learning environments that consider these predictors will be an important next step in the field.

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Appendix A

Items in the Ratings of Strategies Measure.

I learn better when there are...

Quizzes throughout the course

Small projects throughout the course

Shorter but more frequent reading assignments throughout the course

In class exams

Take home exams

Small group assignments outside of class

Small group assignments inside of class

Captioned videos and movies

Visual images and other graphics

Online discussions on Canvas

Power points posted ahead of class

Lecture outlines posted ahead of class

Objectives for the day

Extra time to think after the instructor asks a question

Time to read a power point slide before the instructor talks about its content

Time to think about a question or topic before the start of class activity.

Appendix B

Factor loadings for the LEAF exploratory factor analysis

	Reading, Writing (WE/RD)	Math (MT)	Attention (AT)	Factual Memory (FM)	Unfamiliar content (CC, NP)	Works slowly (PS, WM)	Visual-Spatial Organization (VSO)	Comprehension and Conceptual learning (CC)
Question 1								0.6677
Question 2								0.593
Question 3								0.5267
Question 4								0.6298
Question 5								0.6756
Question 6				0.8322				
Question 7				0.9081				
Question 8				0.8403				
Question 9				0.5460				
Question 10				0.6332				
Question 11			0.5308					
Question 12			0.6952					
Question 13			0.7684					
Question 14			0.8187					
Question 15								
Question 16								
Question 17						0.7313		
Question 18						0.7331		
Question 19						0.7241		
Question 20			0.4495					
Question 21							0.6815	
Question 22							0.7070	
Question 23								
Question 24							0.6382	
Question 25							0.5693	
Question 26							0.6350	
Question 27							0.5072	
Question 28								
Question 29								
Question 30								
Question 31						0.4313		
Question 32								
Question 33			0.4816					
Question 34								
Question 35					0.4484			
Question 36					0.5500			
Question 37					0.4606			
Question 38					0.7465			
Question 39					0.8227			
Question 40					0.7734			
Question 41		0.9149						
Question 42		0.8378						
Question 43		0.8624						

	Reading, Writing (WE/RD)	Math (MT)	Attention (AT)	Factual Memory (FM)	Unfamiliar content (CC, NP)	Works slowly (PS, WM)	Visual-Spatial Organization (VSO)	Comprehension and Conceptual learning (CC)
Question 44		0.7890						
Question 45		0.8974						
Question 46	0.5036					0.4521		
Question 47	0.8089							
Question 48	0.8434							
Question 49	0.9046							
Question 50	0.8789							
Question 51						0.6376		
Question 52								
Question 53	0.7150							
Question 54	0.5329							
Question 55	0.4551							

For the sake of parsimony, only loadings greater than 0.4 in absolute value are reported here.

BRIEF REPORT

Emotional Intelligence and Patient Interviewing Skills in DPT Students

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Purpose/Hypothesis: Success during a patient interview is often measured via patient feedback. The ability of the interviewer to consider the feelings and needs of a patient leads to improved patient experience. The purpose of this study was to examine if emotional intelligence in Doctorate of Physical Therapy (DPT) students correlates with patient interview satisfaction. **Participants:** A convenience sample of 68 first-year DPT students (35 female, 33 male) with age range 23 to 33 from Franklin Pierce University (Arizona) participated in the current study. **Methods:** Participants completed the Assessing Emotions tool to assess emotional intelligence. Volunteer patients completed the Consultation and Relational Empathy (CARE) assessment tool after they were interviewed by DPT students as part of a practical examination. **Results:** Spearman Correlation analysis was conducted with a significant positive correlation between emotional intelligence and patient interview scores (rs = .640, p=.000). **Discussion:** In the current sample, a positive relationship between emotional intelligence and patient interview scores was found. Clinician interactions with patients play an important role in patient satisfaction. There is research showing relationships between EI and patient interview skills in dental and medical students, with no similar research with DPT students. Faculty involved in the training of DPT and other healthcare students may consider utilization of emotional intelligence training. Results of this study warrant further research to evaluate the importance of emotional intelligence training in DPT programs.

Keywords: Emotional intelligence, patient interview, physical therapy, education

Introduction

Physical therapists play an important role in the healthcare environment and make positive differences in the lives of their patients. Trust and rapport between therapist and patient is critical and affected by myriad factors. Before Doctorate of Physical Therapy (DPT) students begin patient care, university educators assess patient interviewing competence (Boissonnault, Boissonnault, & Hetzel, 2013). Research examining patient's opinions of physical therapy services identified relations between patient and therapist to be highly indicative of patient satisfaction. Key characteristics related to aspects of patient satisfaction with clinician interactions included good listening and communication skills, clear explanations of treatments (Beattie, Pinto, Nelson, & Nelson, 2002), as well as patients feeling they were treated with respect and involved in treatment decisions (Goldstein, Elliott, & Guccione, 2000). University educators tasked with training DPT students endeavor to develop these patient interview skills in preparation for clinical rotations and transition to autonomous professional practice.

Emotional intelligence (EI) is widely considered essential to successful personal and professional relationships and is defined as, "…the ability to perceive emotions, to access and generate emotions so as to assist thought, to understand emotions and emotional knowledge, and to reflectively regulate emotions so as to promote emotional and intellectual growth (Brackett, Rivers, Shiffman, Lerner, & Salovey, 2006). Research investigating EI and patient interactions with dental students revealed clinicians with higher EI had superior interview structure (Hannah, Lim, & Ayers, 2009) as well as clinical performance (Hannah et al., 2009; Victoroff & Boyatzis, 2013). Medical students with higher EI are reported to receive greater patient satisfaction scores (Dugan, Weatherly, Girod, Barber, & Tsue, 2014) and possess superior communication skills (Stratton, Elam, Murphy-Spencer, & Quinlivan, 2005). In physicians, higher EI was correlated with higher levels of patient trust (Weng, Chen, Chen, Lu, & Hung,

2008), patient relationships (Weng et al., 2011), and patient satisfaction (Wagner, Mosley, Grant, Gore, & Owens, 2002). A meta-analysis of fourteen studies has shown that EI can improve with training in medical students (Cherry, Fletcher, O'sullivan, & Shaw, 2012). EI levels in DPT students and respective patient interview skills have not been studied. The aim of this study was to measure EI in a group of DPT students. Then, after these students conducted patient interviews, to look for a possible correlation between EI and the respective interview satisfaction reported by patients.

Methods

Participants

Participants included a convenience sample of 68 first-year Doctor of Physical Therapy student volunteers (35 female and 33 male, with age range 23-38 ± 3.56 years old), recruited from the 2018 and 2019 classes at the Franklin Pierce University Goodyear, Arizona campus. Prior to the study, participants had received training on patient interview techniques with specific education on methods of interviewing patients related to musculoskeletal pain.

Procedures

Prior to data collection, ethics approval was granted by the Franklin Pierce University Institutional Review Board. After study participants provided consent to participate, they were administered the Assessing Emotions Scale questionnaires via online survey during the first study term. Students had received training specific to patient interviews related to pain prior to participating in this study. Volunteer patients completed the CARE assessment tool after they were interviewed by DPT students as part of a practical examination. Volunteer patients agreed to come to the university to assist with the practical examination and were interviewed about their actual musculoskeletal pain. Results from the EI survey were analyzed for possible relationships between emotional intelligence levels and patient interview scores using a Spearman Correlation test.

Measures

There are three major EI models: the ability, trait, and mixed model. Schutte's Assessing Emotions Scale emerged from the trait model and is a 33-item validated self-report measure of emotional intelligence (Schutte et al., 1998). The Assessing Emotions Scale asks about emotions or reactions associated with emotions in order to determine level of emotional intelligence of each participant. Examples of questions from this scale are: "I am aware of my emotions as I experience them" and "I like to share my emotions with others". Item responses were scored using a Likert scale as

follows: Strongly disagree = 1, Somewhat disagree = 2. Neither agree nor disagree = 3, Somewhat agree = 4, and Strongly agree = 5. Score values were then summed for each participant to provide an overall score to determine their level of emotional intelligence. Higher overall scores indicate higher emotional intelligence.

The Consultation and Relational Empathy (CARE) measure is a 10-item validated (Mercer, Maxwell, Heaney, & Watt, 2004) tool completed by patients to assess perceptions related to patient-clinician interactions. The tool consists of the question "How good was the practitioner at:", with 10 items such as "Making you feel at ease", and "Letting you tell your story". Patients choose between "poor, fair, good, very good, or excellent" responses.

Methods

Participant Characteristics

Participants included 35 females and 33 males with a mean age of 26.2 ± 4.51. The sample was composed of 32 students from the class of 2018 and 36 students from the class of 2019. Results from Mann-Whitney U tests showed that effects of both gender differences (p = 0.26) and graduate year (p = 0.21) on EI scores were insignificant.

Table 1. Participants

	Class of 2018	Class of 2019	p value
EI scores	132.81 ± 10.12	131.83 ± 11.95	0.24
CARE scores	3.84 ± 0.73	3.92 ± 0.66	0.48
Age	25.7 ± 3.37	26.4 ± 5.12	0.36
Gender	17 female/15 male	18 female/18 male	0.63

Emotional Intelligence Scores

The mean EI score was 132.81 ± 10.12 (range: 105-146) for class of 2018 students and 131.83 ± 11.95 (range: 102-155) for class of 2019 students. The overall mean EI score was 132.29 ± 10.90, p = 0.24.

CARE Scores

The mean interview score was 3.84 ± 0.73 (range: 2.67-4.56) for class of 2018 students and 3.92 ± 0.66 (range: 2.78-4.51) for class of 2019 students. The overall mean interview score was 3.89 ± 0.69, p = 0.48.

Correlation Analysis

Spearman Correlation analysis identified a significant positive correlation between students' emotional intelligence and CARE scores from volunteer patients (rs = 0.640, p = 0.00001). Mean emotional intelligence score 132.29 ± 10.90, mean patient interview score 3.89 ± 0.69.

Table 2. EI and CARE score correlation results

Emotional Intelligence	CARE	Spearman Rho	p value
132.29 ± 10.90	3.89 ± 0.69	$R_s = 0.640$	0.0001

Discussion

In the present study, a positive correlation was found between EI and patient interview scores in this sample of graduate DPT students. In clinical settings, clinicians will encounter patients with many different types of personalities and needs, as well as patients with varying levels of pain, vulnerability, and emotional turmoil. Successful patient interactions rely on the clinician's ability to establish a rapport with and gain the trust of the patient. EI involves awareness of and effective management of the emotions of oneself and those of others. In clinical practice, higher EI skills allow the clinician to make effective clinical decisions using the emotional information they have gathered. Similar research conducted with dental (Hannah et al., 2009) and medical (Dugan et al., 2014) students resulted in findings of a positive correlation between EI and patient satisfaction.

Findings of the present study are consistent with previous research with healthcare students of different disciplines. A correlation appears to exist between higher levels of EI and superior abilities to build rapport and emotional connection, and to develop a better emotional understanding of patients. These factors appear to result in higher levels of patient satisfaction with interviews. Results of this research indicate preliminary evidence supporting inclusion of EI training for DPT students to support their success with patient interactions. Further, university educators preparing students in all areas of healthcare where patient interviews are conducted may consider inclusion of EI training to improve patient interview outcomes.

Future research can include larger samples of DPT students in different graduate programs to increase the generalizability of the findings and to compare results among DPT programs. Are there differences in delivery of EI training that may affect outcomes? Would incorporation of EI training throughout all phases of a DPT curriculum change outcomes compared to EI training at the beginning of a curriculum? The universal importance of effective clinician/patient interactions across all healthcare disciplines make this an important topic for future investigation.

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FROM THE FIELD

COVID-19 Has Made Public University-Community College Partnerships More Important Than Ever

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The challenges facing educators and administrators alike have arguably never been greater. COVID-19 created a period of change and adaptation for most university faculty, students, and administrators. As universities develop long-term responses to the economic and social problems exacerbated by the pandemic, strengthening partnerships between public universities and community colleges is one remedy available to leaders. This piece draws on lessons learned through the New Hampshire Humanities Collaborative, which works to build and deepen relationships between faculty at the College of Liberal Arts at the University of New Hampshire and the seven colleges of the Community College System of New Hampshire. It provides several specific recommendations, including formal course articulation agreements, bi-annual training workshops, and student mentorship programs. Overall, these partnerships offer an accessible model for higher education to protect institutional longevity, enrich student experiences, and build more inclusive and diverse communities of learning.

For most university faculty, the past year has been a prolonged period of change and adaptation. We learned how to support students learning from their childhood bedrooms, to encourage our students to engage different or controversial viewpoints – even if voiced behind a mask or webcam – and to adjust to the realities of social distancing in the classroom. As we move beyond the challenges of reopening during a pandemic, university leaders nationwide have begun to develop a longer-term response to the emerging economic and social problems exacerbated by COVID-19.

Amidst discussions about how to maximize expensive technological investments and reallocate physical space, we urge leaders across the country to avoid one-size-fits-all disciplinary solutions, and focus on strengthening the partnerships between public universities and community colleges vital to the future of higher education. We represent a group of faculty working on an initiative called the New Hampshire Humanities Collaborative, which works to build and strengthen relationships between faculty at the College of Liberal Arts at the University of New Hampshire (COLA-UNH) and the seven colleges of the Community College System of New Hampshire (CCSNH). Supported by a grant from the Andrew W. Mellon Foundation, this initiative funded a series of partnerships between public institutions in our state, including transfer pathways for students from CCSNH to COLA-UNH, shared curricular development between faculty, student exchanges and internships, and student transfer mentors. Our partnership provides a model for public institutions across the country to adapt and grow – promoting public institutions' longevity, enriching our students' experiences while in school, and strengthening the skills and insights they take with them after graduation. Specifically, we:

- Adopted formal course articulation agreements between community colleges and specific departments at UNH-COLA, which improves course rigor across the state, guarantees that community college credits will transfer, and fosters regular enrollment in humanities majors.
- Organized bi-annual training workshops to provide an opportunity for CCSNH and UNH-COLA faculty and administrators across institutions and the state to identify problems in the transfer process and share pedagogical approaches.
- Implemented a small grant program to incentivize collaboration between faculty across CCSNH and UNH-COLA.

- Helped developed a student mentorship program that matches newly transferred students with peer leaders at UNH, ideally former transfer students themselves.
- Organized a regular newsletter, email listserv, and website, for faculty and administrators to share resources, information, programming, and progress toward shared goals.
- Hosted an annual contest across CCSNH and UNH-COLA, where students across institutions submitted their humanities work in categories such as "Change the World," including prizes and an awards night to honor students together.

The challenges facing educators and administrators alike have arguably never been greater. The social isolation of COVID-19 threatens real dialog, comradery, and understanding between students and faculty. At the same time, the pandemic's economic consequences threaten the already-perilous future of the humanities (Kramnick, 2020) at a critical historical juncture. As a discipline, the humanities is arguably best equipped to promote an appreciation for different perspectives, democratic institutions, and norms – necessary for the country to move beyond the contentious 2020 presidential election and its fallout.

Our partnership fostered socially distant relationships between students and faculty across our state long before the pandemic disrupted higher education, building a more inclusive and academically-diverse community of learning. Students across our institutions interacted and collaborated on coursework, which fostered relationships and broke down barriers to transfer. Institutions across the state jointly updated curriculum, promoting a more robust education that better-prepared students to transition to post-transfer courses. And we promoted and publicized student work in public and online formats, which not only gave students a forum to share work that was important to them, but also helped develop their expertise in areas like storytelling, research, creative design, and project management – all core humanities skills applicable in a host of post-graduation careers. Our partnership strengthened individual community colleges by providing a viable and cost-effective route to a four-year degree. And it strengthened the university system by fostering a pipeline of community college students to liberal arts majors, integrating a greater variety of student backgrounds and experiences into higher education through enhanced transfers, and enhancing the rigor of our curriculum through an attention to a wider range of student needs.

Pandemic aside, a four-year degree has long been out of reach for too many. State funding for public higher education has declined significantly since the 2008-09 recession, fostering increasingly prohibitive tuition costs. And while

enrollment numbers are mixed, universities and community colleges nationwide have experienced steep enrollment declines since 2011 (American Association of Community Colleges, 2019; National Student Clearinghouse Research Center, 2020). Meanwhile, recurring recessions significantly harmed employment numbers and long-term earnings potential. In this environment, we have a responsibility to expand student access to higher education and meet the needs of an increasingly remote, knowledge economy.

One way to meet this need already exists: students enroll at area community colleges to fulfill general requirements, then transfer to a nearby four-year institution to complete their B.A. or B.S. Such academic tracks can expand higher education to more students and reduce costs for both students and institutions – but only if it is effectively implemented by strong partnerships between community colleges and four-year institutions. Nationally, community college credit hours are approximately 38 percent lower than four-year institutions (Belfield, Fink, & Jenkins, 2017). But research shows that many community college credits fail to transfer because four-year institutions do not accept them, costing transfer students excess tuition dollars and time-to-degree to catch up to their peers (Hu, Ortagus, & Kramer, 2018). And while it is often difficult to estimate exact numbers, many students who want to transfer ultimately fail to do so altogether. This "diversionary effect" is driven by a lack of information, motivation, and socialization to higher education (Belfield, et al., 2017).

The NH Humanities Collaborative directly addressed these issues by bringing together faculty, staff, and former and prospective transfer students across the state. We constructed "majors pathways" for transfer credit between CCSNH and COLA-UNH majors, and universal course articulation agreements between institutions. We invested in student mentorships to smooth the transfer process, created internship programs for transfer students, and collaborated on curriculum to keep higher education learning rigorous and consistent. Importantly, none of these actions required significant financial investment from public institutions; rather, we invested in opportunities for improved communication between faculty and administrators, including bi-annual workshops, networking opportunities, and even simple email listservs to exchange information. We also incorporated student outreach into all our programs, educating parents, community college students, and high schoolers across the state about this effective, desirable transfer route. The pandemic incentivized some students to stay closer to home at two-year institutions, while others sought out the much-missed social comradery of four-year institutions. As the economic fallout of the pandemic further limits affordability for all

students, institutions across the country have an obligation to meet students where they are, provide multiple pathways to pursue higher education, and help develop needed skills and career training.

Our partnership also worked to expand students' academic communities and perspectives, the hallmark of a humanities education and vitally important amidst renewed attention to systemic racism, partisan polarization, and student isolation. As faculty, our courses seek to engage students on a journey that introduces them to experiences, viewpoints, and ideas different from their own – but much work remains to be done to broaden representation in the classroom. Indeed, the pandemic fostered an emerging enrollment crisis among Black students, whose enrollment at universities and community colleges declined by 8.3% and 10.5%, respectively (Fain, 2020). As faculty struggle to find ways to encourage learning behind a mask or a webcam, we cannot ignore opportunities to increase inclusiveness and build learning communities that reflect the rich, dynamic diversity of the country.

In fall 2020, the NH Humanities Collaborative piloted a project involving six courses on three campuses (UNH, Great Bay Community College, and Nashua Community College) to explore the social, political, and historic challenges of the COVID-19 pandemic. The faculty met several times over summer 2020 to design parallel and complementary assignments, which culminated in an online symposium with the students of all six courses. Faculty customized assignments to the subject matter of individual courses while collaborating with colleagues to provide an examination of the pandemic from different disciplinary vantage points. Students in the Great Bay Community College history class researched the history of global pandemics, and a US government class at Nashua Community College examined state and local responses and federal policies. Finally, a world politics course at UNH provided a comparative examination of the COVID-19 mitigation policies in other countries (Germany, Japan, and the United Kingdom). Two months into the semester, students came together via Zoom to present their findings and engage in discussion and analysis. For over two hours, multiple classes from three campuses constituted one learning community, all striving to understand a complex, diverse, and critical challenge. The project provided a venue to leverage each institution's strengths to foster empathy, tolerance, and awareness between university and community college students, both of whom can learn from each other. In a small, largely rural state like ours, larger university classes oftentimes bring together a wider array of student experiences and viewpoints, while smaller community college classes provide a more substantive opportunity to listen and learn from each other. Nationwide, community colleges serve a different student population, including more adult and first-generation students, while universities tend to offer a wider range of academic disciplines and perspectives.

Partnerships like ours encourage students across institutions to dialogue, share experiences, and challenge stereotypes about each other. Students in the NH Humanities Collaborative's partnership courses and programs learn from the same set of course materials; discuss class theories and concepts in-person and remotely; work together to complete assignments and experiential education simulations; engage on current issues via shared online platforms (e.g., Flipgrid) as course supplements; and observe their faculty treating each other, and the students, as equals. Participating community college students report feeling a greater sense of confidence in their ability to "fit in," contribute to, and visualize succeeding at a four-year institution. This simple yet vital socialization experience encourages students to think about transferring, opening up possibilities, and potentially completing their bachelor's degree, thereby ameliorating the "diversionary effect" (Belfield, et al., 2017). Likewise, surveys of participating UNH undergraduates show that students appreciate expanding their relatively homogeneous classroom environment and learning with and from their community college peers.

Perhaps no aspect of our partnership has more relevance in the current era of remote work and declining state education funding than our emphasis on expanding digital resource access. This was particularly evident during the Mock Democratic and Republican Nominating Convention involving 22 courses and 5 community colleges. As part of the simulation, students conducted research on state political dynamics and policymaking, a task our community college colleagues reminded us was undoubtedly more difficult for their students who did not have numerous librarians available to help, or university-wide subscriptions to scholarly journals and databases, as we did.

Our partnership taught us that our students need research skills that can be used regardless of whether they can surmount a paywall. We can do far more to prepare our students for a 21st century digital world where open-access, open-source materials are increasingly the norm, and digital literacy is a pre-requisite for most employment opportunities (Hecker & Loprest, 2019). As the pandemic isolates students away from library stacks – and the economic crisis hastens the need for marketable remote work skills – we must invest in digital learning strategies like this. Indeed, many of the same scholarly databases and journals that our students benefit from now are becoming increasingly out of reach, even for large, universities like ours. As the pandemic threatens further

budget cuts, leveraging academic librarians' expertise and library infrastructure to reach the needs of students at diverse institutions across the state is a smart economic decision for state legislatures (Peet, 2020). At the same time, technology is also an important equalizer, particularly in terms of reducing travel costs and time in large and/or rural states. Faculty and staff from more rural areas who normally would need to make a substantive time commitment and drive several hours to a workshop at UNH were able to attend our biannual workshops virtually via Zoom.

Partnerships like ours begin with simply creating the space for collaboration across campuses and then develop programming iteratively. To do this, institutions might consider several approaches. First, create a working group of interested, key faculty across institutions. Second, host events across the year to present key challenges, run workshops around shared goals, and (most importantly) build relationships through shared goals. And finally, focus on initiatives that bring students together – in curriculum, in events and programming, and throughout their academic careers through transfer.

If other public institutions want to adopt our model of collaboration, we recommend starting small. The first step only requires identifying interested faculty and staff who are willing to engage with each other across different campuses. Then, we recommend organizing workshops – what we label "Summer" and "Winter" academies" – that include faculty, staff, admissions counselors, and most importantly, a few Deans and other key leaders at the different institutions who are willing to issue a call for action and engagement. These 'calls to action' provide motivation, justification, and inspiration, and are tailored to fit each institution's goals, including social justice, enrollment needs, or other strategic interests. During these academies, we employed several mechanisms to foster relationships including workshops, strategy sessions, and general efforts at community building. Each academy is centered around a theme (i.e., Community, Democracy, or Racial Diversity) and included work to raise awareness of both the challenges and need for more inclusive education. One very effective approach involved task-oriented workshops. At these workshops, faculty from across campuses met together in breakout rooms to discuss essential elements and curriculum that would be necessary to create pathways from, for example, history courses at the community colleges to the History Department at UNH. This work takes time, communication, and community building, and initial meetings were occasionally met with skepticism and even bias. But our partnership's emphasis on institutionalizing these meetings

several times each year ultimately fostered individual relationships, building trust and enthusiasm across colleges. After these initial meetings, participation grew as organizers began a "match-making" of sorts connecting key faculty and administrators on different campuses and recruiting them into a range of projects, including internship programs; course collaborations; the 300+ person Mock Nominating Political Convention; a HUGEmanities project giving tools and assignment templates from the digital humanities to faculty, a statewide contest where students at both CCSNH and UNH submitted work; and shared faculty research around racial and social justice.

While small pilot grants are ideal to incentivize this work and build momentum, the most essential piece is leadership: a few like-minded and committed individuals on a few different campuses, and a meeting space with a few tables for breakout sessions and workshops (and perhaps a coffee pot and tray of cookies to encourage informal conversations). We cannot stress enough that relationship-building across institutions is by far the most essential aspect of all of these programs, and can be achieved without any external funding. Indeed, as humanists, we must always remember the key role of human-to-human connection, and the last several years have highlighted the importance of relationships – faculty, administrator, and student – in achieving our goals.

The pandemic and the raw divisions revealed and amplified by the election, have made humanities partnerships between universities and community colleges like ours more urgent than ever. As academic leaders strategize about how to move beyond the immediate crisis of the fall semester, we all have a responsibility to reach out to our neighboring institutions to start a conversation about strengthening ties. Faculty, students, and institutions of higher education will be better off for it.

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