Campus Experiences Migrating to a Virtual Learning Environment in Response to the COVID-19 Pandemic

Jared Dmello, Ph.D.

Mahmoud Khasawneh, Ph.D.

Alicia Segovia, B.S.

John Kilburn, Ph.D.

Daphne Sanchez, M.S.

Submitted to: Pablo Arenaz, Ph.D.

Texas A&M International University, Office of the President

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Executive Summary

Context: As the United States saw a rapid increase in COVID-19 positive cases, institutions took measures to comply with the recommendations provided by the Centers for Disease Control and Prevention (CDC) as a means to mitigate the spread of Coronavirus disease. The World Health Organization declared the disease a global pandemic, which forced institutions across the nation to transition to virtual learning environments as an emergency response. Although Texas A&M International University is familiar with online courses, the emergency transition presented a unique set of benefits and challenges, not previously experienced. The new learning environment is not equivalent to online classes but a transition of face-to-face courses to a virtual platform. Because of disciplinary norms and approaches to pedagogy, the effectiveness of instruction post-transition likely varies across the campus community, impacting faculty and students alike. This study aimed to analyze individual impact of emergency transition to a virtual environment and provide recommendations to improve this experience for both faculty and students at Texas A&M International University amidst the ongoing pandemic.

Methodology: Following TAMIU Institutional Review Board approval, surveys were administered to all faculty and students to assess the impact of their emergency transition to a virtual learning environment post-Spring Break. Between April 24th and June 13th, a total of 381 valid responses were collected: 66 from faculty and 315 from students. The surveys administered included quantitative and open-ended qualitative questions with items such as demographic data, questions regarding reliable access to technology, experience with online courses, attitudes towards transition to virtual environment, and course administration.

Findings: We first present findings from quantitative measures, followed by a detailed thematic analysis of qualitative data. Overall, we find that the TAMIU campus community was resilient in its migration to a virtual learning environment. Although faculty only had the week after Spring Break to transition their courses for virtual delivery, instructors completed the task at hand. TAMIU's E-Learning team provided extensive training and support throughout the migration process, continuing to assist for the duration of the term. Several faculty respondents commented on the significant impact that the E-Learning team had on learning experiences post-transition, noting that E-Learning went above and beyond to guide faculty forward during uncertain times. While student experiences were largely positive, they also provided feedback on how the University could better improve inclusion and equity for a diverse group of learners.

Context

The novel virus COVID-19 has significantly impacted individuals across the world. Following similar trends exhibited around the world, in March 2020, the United States saw a rapid increase in cases testing positive for the virus and quickly took measures to mitigate the spread of disease such as requiring social distancing and implementing travel bans. COVID-19, which was officially declared a global pandemic in March 2020 by the World Health Organization, forced institutions of higher education across the United States to transition to virtual learning environments as an emergency response.

The global pandemic has presented challenges to the entire Texas A&M International University (TAMIU) community. While many operations of the University were greatly affected in how it continued addressing its mission, this report focuses on the direct changes in the classroom experience for student and instructor. Many faculty and students were unable to return home to Laredo from spring break; one student, for example, described being unable to leave their home country to return to the United States due to COVID-19 restrictions. Other challenges include changing childcare situations, inability to obtain reliable internet access, and faculty/student level of comfort using technology. Although TAMIU has offered online classes in the past, the emergency transition in response to COVID-19 has presented very different challenges. Contrary to beliefs, these classes are not equivalent to online classes. It is quite possible that the effectiveness of instruction varies by discipline

As technology has improved over the years, distance learning has allowed students to balance other obligations outside of academia (i.e. work, family life, etc.). Students are able to easily access their courses on the go through their iPad, laptop, or even mobile device. However, some studies have found students feel a higher level of disconnect from their peers and lecturer in online classes (Otter et al., 2013). The study by Kemp and Grieve (2014) aimed to analyze students' preference for, and academic performance on, class material and assessment provided by online vs. in traditional face-to-face classroom environments. The researchers found students strongly preferred face-to-face activities over online ones but found no significant difference in test performance. Additionally, the researchers found that students felt more engaged in face-to-face class discussions and preferred the immediate feedback. Harris and Gibson (2006) conducted a survey to analyze individual differences, course preferences, and enrollment in distance education vs. face-to-face classes. The survey included questions about demographics, experience with distance learning, external employment, comfort with using technology, and frequency of computer use. The researchers found that being employed full time was significantly associated with likelihood of enrollment in distance learning courses but not with expressing a preference for them (Harris and Gibson, 2006). Like previous research, these findings indicate that individuals who pursue distance education are those who have outside obligations (family, work, etc.). Students' previous experience with distance learning also explained their preference for distance education because familiarity appeared to promote liking.

In a more recent study by Cooper, Gin, and Brownell (2019), researchers explored the differences between in-person and online students pursuing degrees in Biological Science within the same institution. Students from an Introductory Biology I online course and students

enrolled in the same introductory course but provided face-to-face were recruited for this study. They found that in regard to gender and race/ethnicity, online biology students were relatively similar to students in the in-person course. The researchers did find demographic differences within the groups. A greater percentage of students in the online class were first-generation college students, identified as lower-class growing up, transferred to the institution from junior college, had previously earned an associate's or bachelor's degree, worked at least 21 hours per week, and identified as a primary caregiver.

In the subsequent sections, please find information about the methodology applied for this study, findings, and subsequent recommendations. This project was conducted as a part of the TAMIU Louis Stokes Alliance for Minority Participation initiative. This report is available for open release and can be forwarded to any TAMIU entity; individuals may also request a copy of this report directly from the study's lead investigator, Dr. Jared R. Dmello, at jared.dmello@tamiu.edu.

Methodology

To assess the impact of conducting an emergency transition to a virtual learning environment in March 2020 for the duration of the Spring 2020 semester, surveys were administered to all active faculty and students. Responses were collected between April 24th and June 13th. In total, there were 66 faculty and 315 student valid responses. Both the faculty and student survey collection instruments were approved by the TAMIU Institutional Review Board prior to release. Surveys included both quantitative and open-ended qualitative questions. Items included demographic data, questions about access to reliable technology post-transition, previous experiences with online courses, attitudes towards the transition, and course administration. Percentages reported are the proportion of respondents who responded to the individual item, unless otherwise noted.

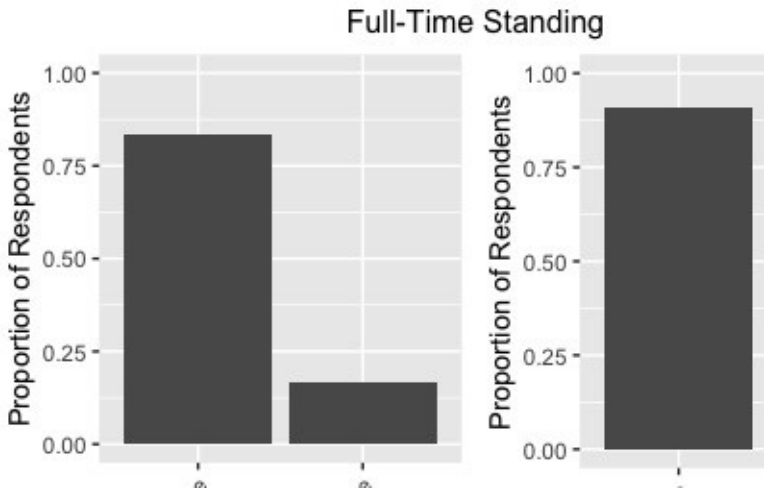
Findings

Overall, we find that the TAMIU campus community was resilient in its migration to a virtual learning environment. Although faculty only had the week after Spring Break to transition their courses for virtual delivery, instructors completed the task at hand. TAMIU's E-Learning team provided extensive training and support throughout the migration process, continuing to assist for the duration of the term. Several faculty respondents commented on the significant impact that the E-Learning team had on learning experiences post-transition, noting that E-Learning went above and beyond to guide faculty forward during uncertain times. While student experiences were largely positive, they also provided feedback on how the University could better improve inclusion and equity for a diverse group of learners.

Demographics

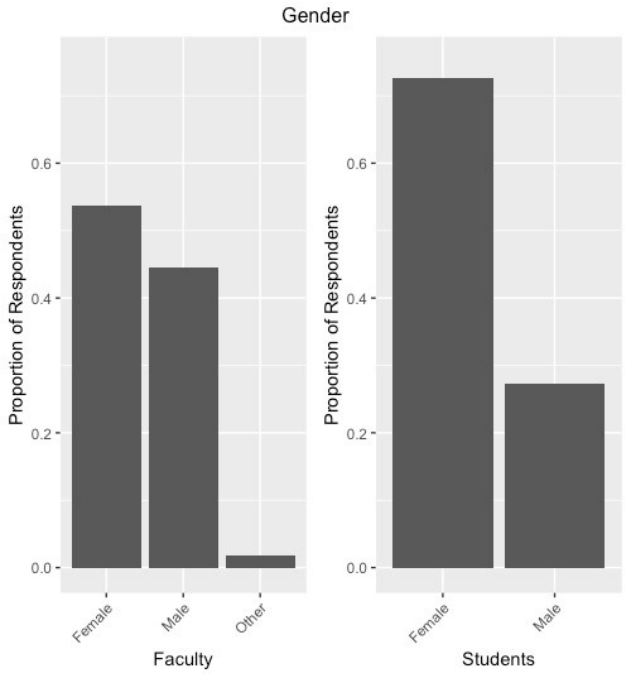
Responses came from primarily full-time faculty (83.33%) and students (91.13%), which implies an increased investment in transitioning to a virtual environment. Respondents were distributed across classification for both faculty (e.g., tenure-track, tenured, professional track,

adjunct, etc.) and students (e.g., freshman, sophomore, junior, senior, etc.). Because full-time faculty and students generally have multiple active courses, they likely experienced a greater toll from transitioning to a virtual learning environment. Full-time faculty were more likely to have multiple classes to transition over and administer, while students were interacting with learning platforms for multiple courses.

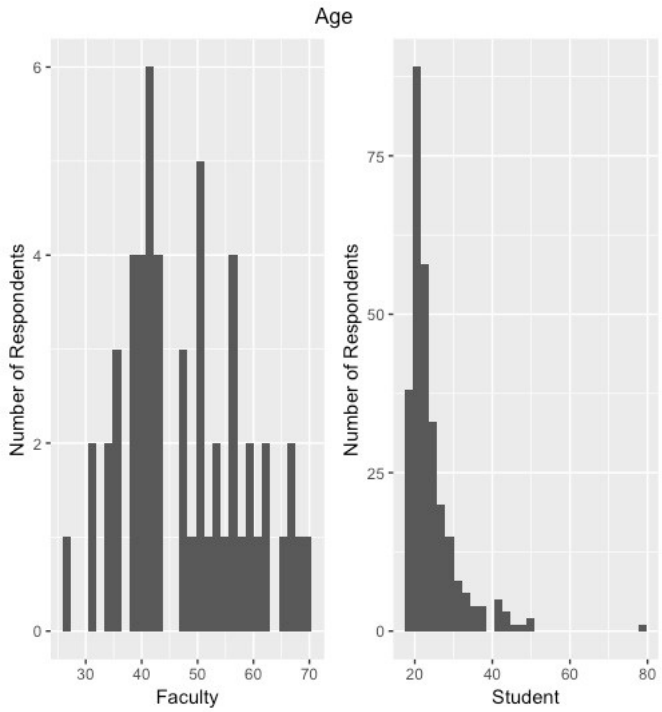


Respondents identifying as females were more prevalent in both samples. For faculty, there was relative parity between males and females – one individual identified as other than female or male. For students, 72.70% identified as females, and 27.30% as males.[1] Past research has found that women have increased rates of participation in higher education than their male counterparts (Ntiri, 2001).

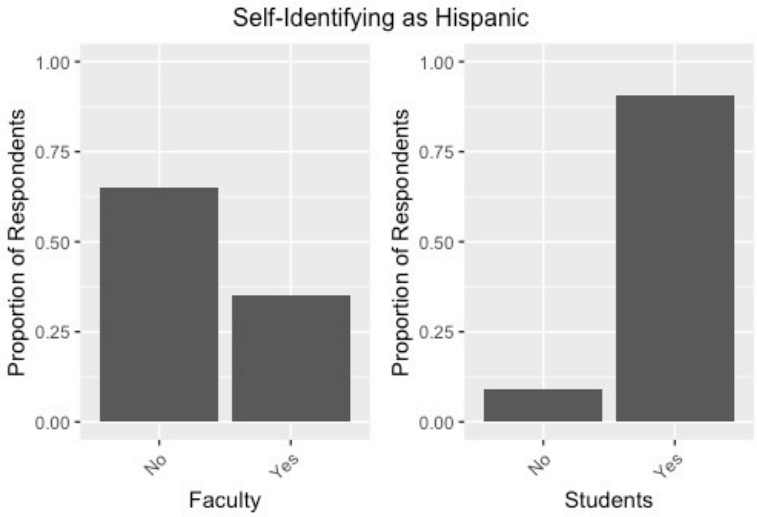
[1] Females were likely over-represented in the student sample. Per institutional records, in Fall 2019, 61.3% identified as females and 38.7% identified as males.



Participant ages significantly varied. The average faculty respondent was 47.70 years old (*min* = 26, *max* = 69) and the average student was 24.20 (*min* = 18, *max* = 78). For both samples, the median was below the mean. The relatively younger samples could impact campus attitudes toward the transition to a virtual learning environment, as past research has found an increased use of technology in millennials (McMillan & Morrison, 2006; Stasio, 2013). Building on this increased reliance on technology and 'digital native' status, Roehl et al. (2013) recommend implementation of a 'flipped classroom' approach as a method for further engaging millennial students through active learning. Additionally, research in applied contexts have found a positive significant relationship between age and organizational commitment (Kras et al., 2019); thus, while younger individuals are more likely to be 'tech-savvy', older individuals are more likely to remain affinite to an institution even during difficult times.

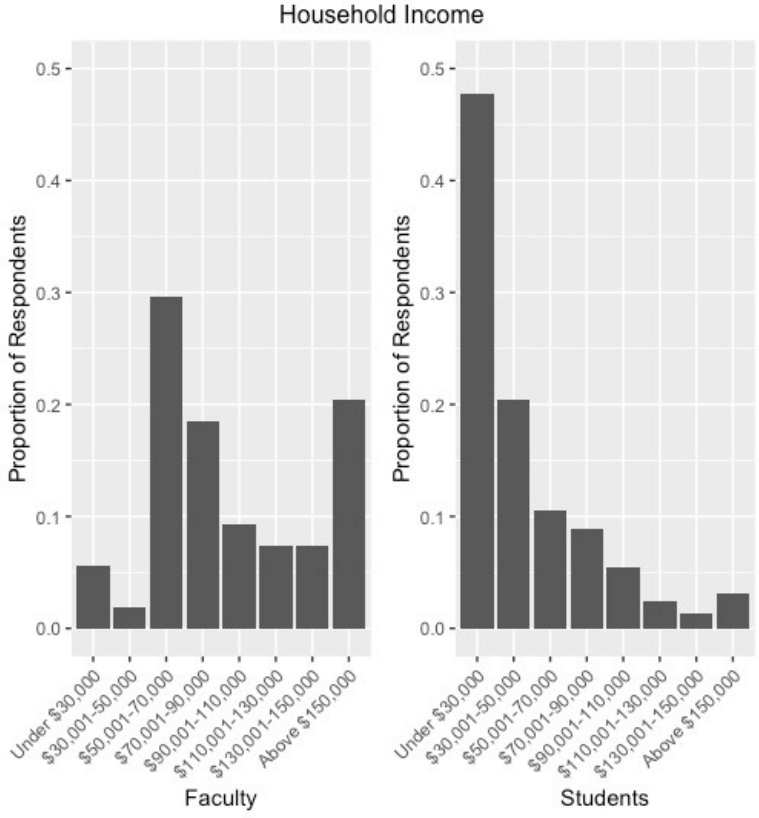


Most faculty respondents (64.81%) identified as “Not Hispanic” whereas the majority of student respondents identified as “Hispanic” (90.78%). This is in line with TAMIU’s demography as a Hispanic-Serving Institution and past trends. Per institutional records, in Fall 2019, 93.8% of students at TAMIU were Hispanic. This variation in race could partially explain the difference between students and faculty attitudes toward the transition to a virtual learning environment. Du and Anderson (2003) found that minorities and students in lower socioeconomic statuses lagged behind their peers in academic achievement, though this finding diminished if only considering on-campus computing resources. TAMIU maintained student access to computer labs on campus after transitioning to a virtual learning environment, which could help address deviations based on race.



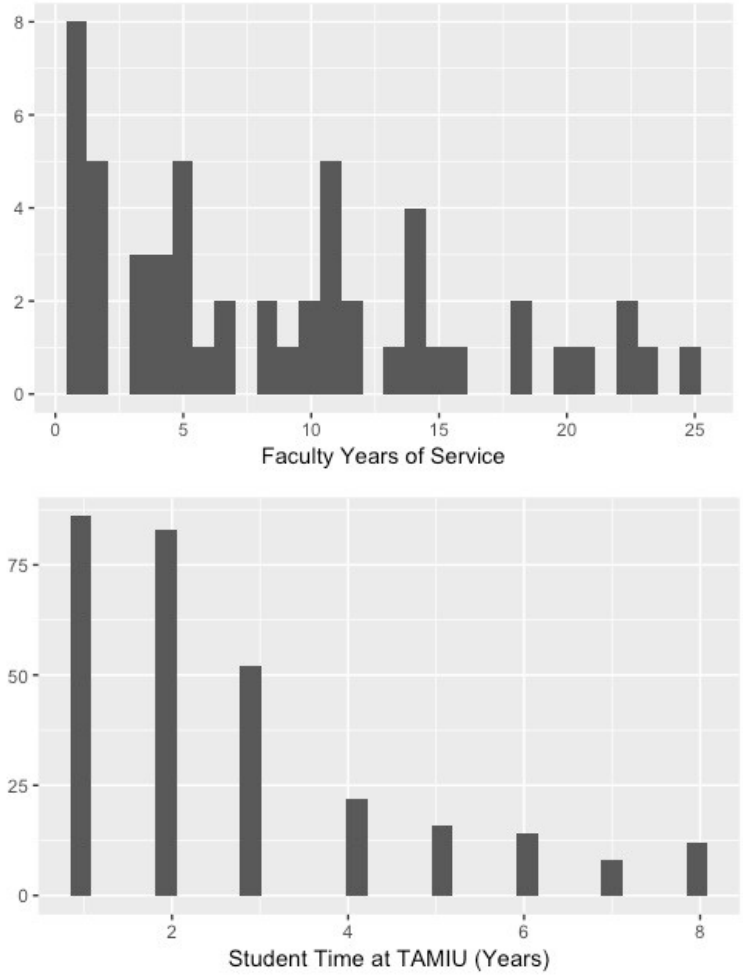
Minorities were largely underrepresented in the samples.[2] African Americans (faculty = 3.70%, students = 0.68%), Asians (faculty = 7.41%, students = 2.73%), Pacific Islanders (faculty = 0%, students = 0.34%), and American Indian or Alaska Natives (faculty = 1.85 %, students = 1.37%) combined only represent 12.96% (7 of 54) of faculty respondents and 5.12% (15 of 293) who answered this item. Given that past research has highlighted that minorities face greater challenges to success in higher education (see: Ntiri, 2001; Poon et al., 2016; Ward, 2006), these are particularly susceptible categories. TAMIU should consider the impact on these populations and identify specific needs for the purpose of promoting diversity, equity, and inclusion of all demographics within the broader campus community.

For both categories of respondents, the majority were not the sole income provider for their households (46.30% for faculty and 17.41% for students). However, total household income was far more distributed across categories. While faculty distributions were more spread, just under half of student respondents have households that make less than $30,000 per year (47.78%), over double the next highest bracket of $30,001 to $50,000 (20.48%). This means that the student population was particularly susceptible to changing financial circumstances associated with the COVID-19 pandemic, such as the loss of employment opportunities both formal and informal.



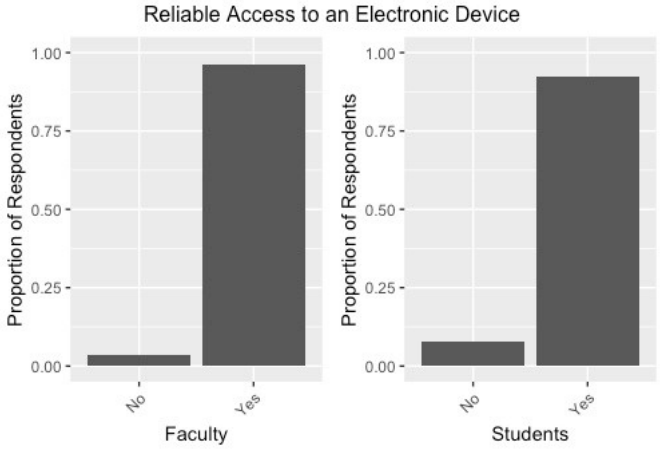
[2] Minorities are operationalized as individuals identifying as non-White and non-Hispanic. Given the demographics of Laredo, Hispanics are categorized within the majority for the purpose of this report, despite being a national minority.

Time spent at TAMIU varied for both sets of respondents, with the highest levels being newer to TAMIU. On average, student responses were at TAMIU for 2.77 years (*min* = 1, *max* = 8). Faculty temporal investment in the institution (*M* = 8.83) was far more varied, ranging from 1 to 25 years.

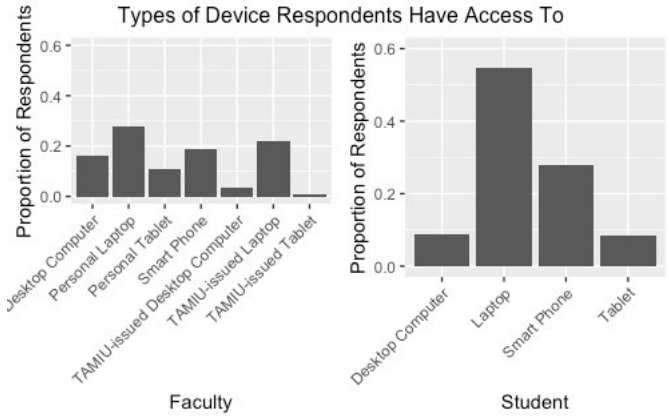


Technological Capability

In general, faculty and students did have reliable access to an electronic device; however, in both categories, a small percentage did not have access to this technology (faculty = 3.70%, students = 7.85%). While TAMIU did ensure computer labs remained open after the transition, other factors beyond the University's control, such as daycare being unavailable or personal concerns for health safety, could remain a challenge for students successfully completing their coursework and for faculty members' ability to administer those courses.

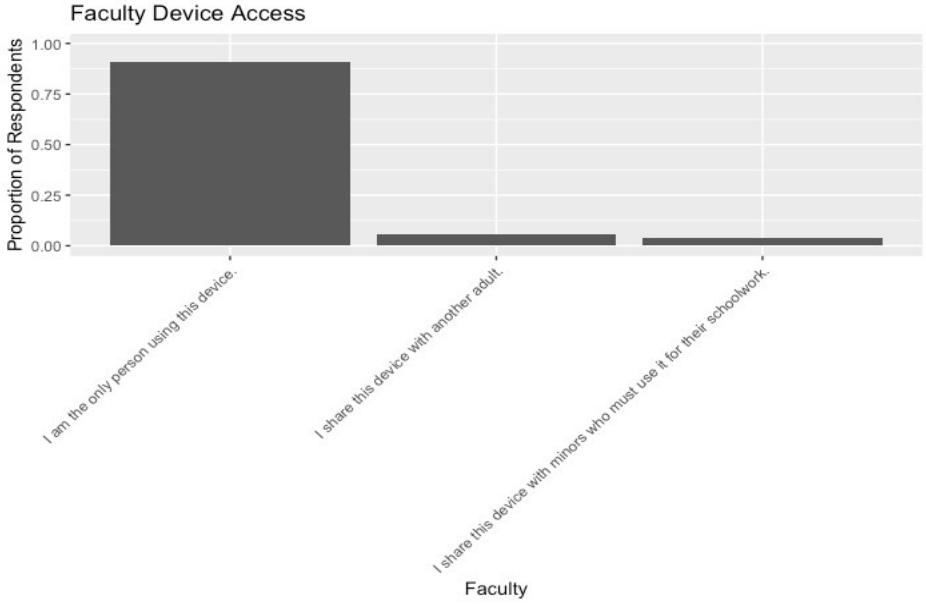


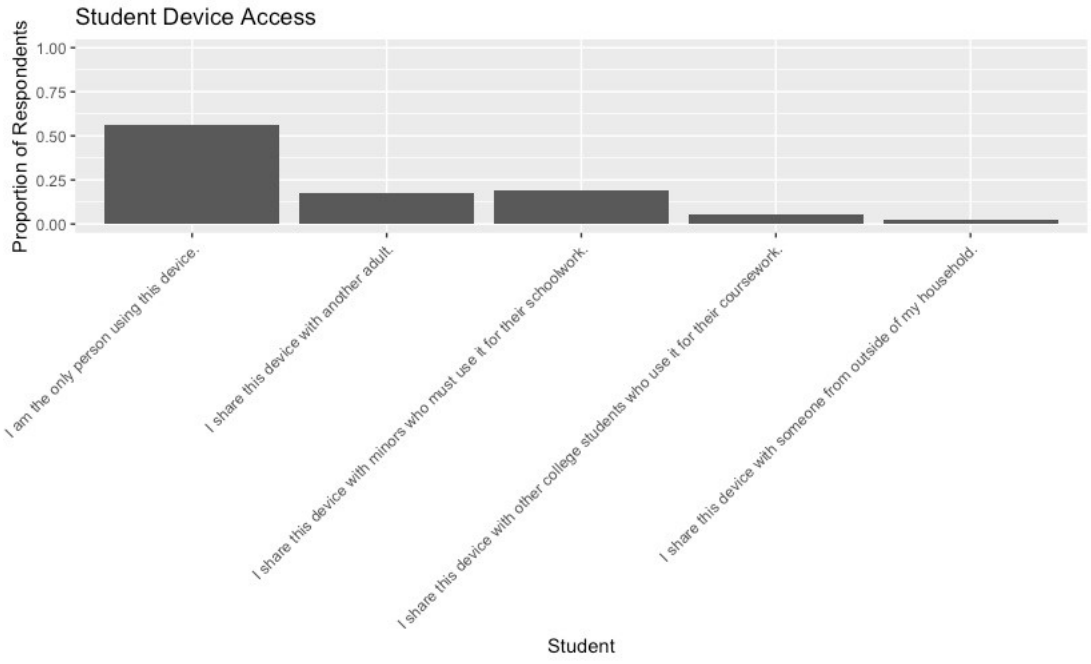
The type of device to which participants most frequently had access was a laptop computer for the purpose of virtual learning. For faculty, 27.97% had access to a personal laptop and 22.03% to a TAMIU-issued laptop, while 54.62% of students had access to a laptop. Another factor to consider is access to a reliable Internet connection, which was a recurring theme in both student and faculty qualitative responses. Per the U.S. Census, for example, only 63.1% of Laredo residents have a broadband internet subscription (U.S. Census Quick Facts, 2019 Population Estimates). While companies, such as Spectrum, provided options for learners to obtain access to Internet services, these were short-term solutions to a persistent problem. A key finding here is that the smart phone serves multiple purposes. For approximately one-third of our students, the smart phone is both the internet access point (i.e. a hotspot) and the device used for learning. Both apps and mobile versions of websites on phones are often limited in terms of what students may access or the way it is visually presented.



While the majority of respondents were the sole users of the device they frequented for courses, a proportion was reliant on shared devices. Of faculty respondents, 9.43% shared devices either with another adult or with minors who needed the device for their schoolwork. This percentage was far higher for student respondents (44.03%). In addition to the categories present for faculty, students also shared devices with other college students and with adults living in other households. This finding likely connects to socioeconomic status in the region, as Laredo's

poverty rate (29.1%) is over twice the national average (11.8%) (U.S. Census Quick Facts, 2019 Population Estimates). Additionally, local families have a tendency to remain close-knit; thus, it is not surprising to see interconnectivity of resources. Consistent with this trend, in the qualitative responses, one student commented that "[t]ransition has been difficult since many of us have to share technology with other family members."

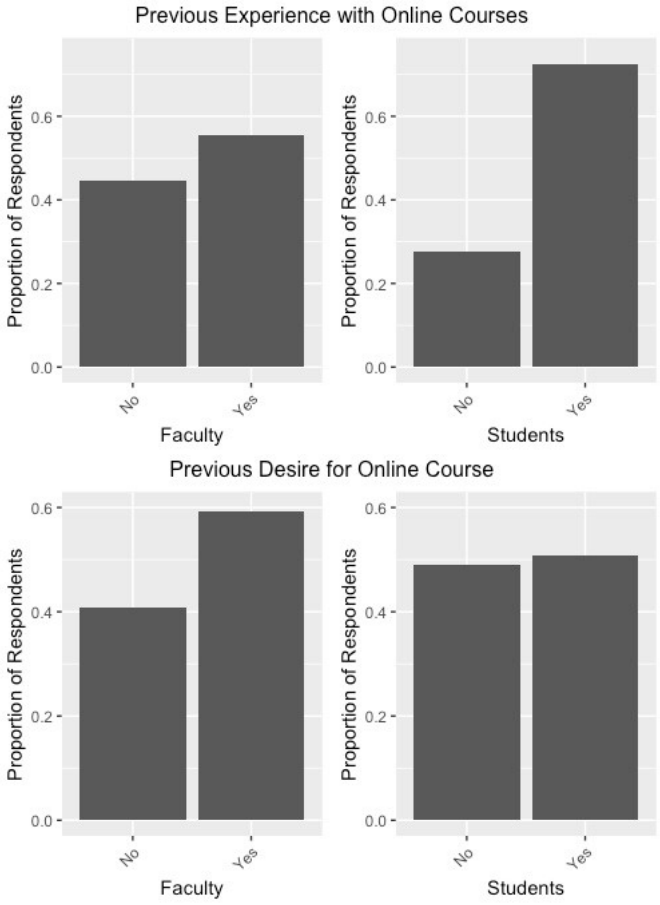




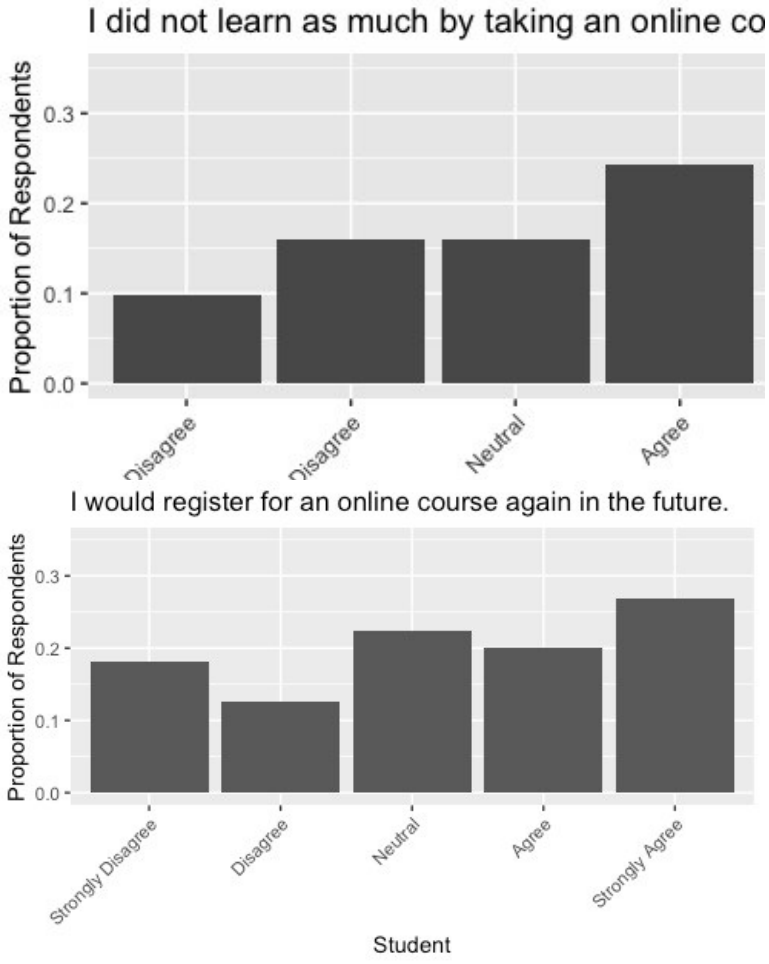
Past Experiences

Overall, the majority of faculty (55.56%) and student (72.47%) responses had some previous experience with online courses prior to the Spring 2020 semester, with most respondents reporting a desire to engage in online courses prior to the Spring 2020 semester. Past experiences have the

potential to facilitate the transition to online learning since the change is not a novel concept. Survey responses indicate that while the campus remains split, a slight majority of students were interested in taking online courses before the transition to a virtual learning environment and faculty expressed a desire to teach them.



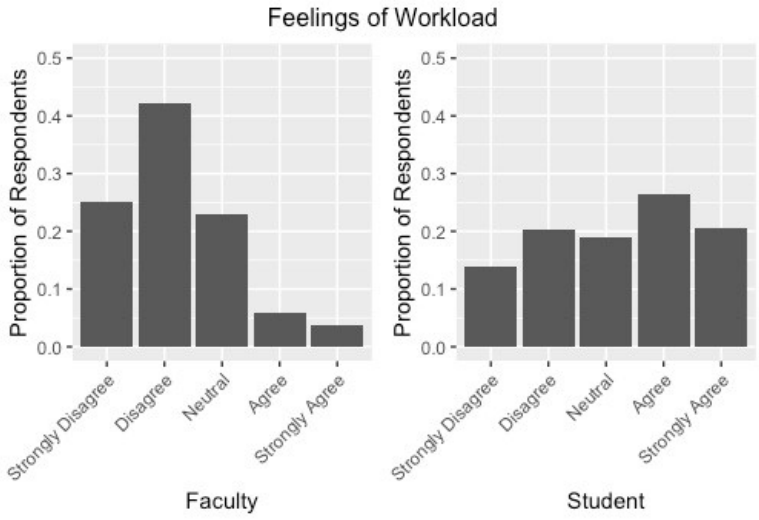
However, past experiences also impact attitudes toward the transition. Specifically, 58.05% either agreed or strongly agreed that the quality of their education was lower for their previous online course than it would have been if they took it in a face-to-face format. A lot of factors could impact this determination, which is quite prevailing in the media. Despite this finding, student respondents also reported a tendency toward enrolling in an online course in the future and that they enjoyed their previous course. Given these findings, it may behoove the University to ensure faculty receive adequate training in designing courses built for an online environment, such as through the Quality Matters framework, rather than attempting to adapt the delivery of courses that remain structurally similar to their face-to-face counterparts.



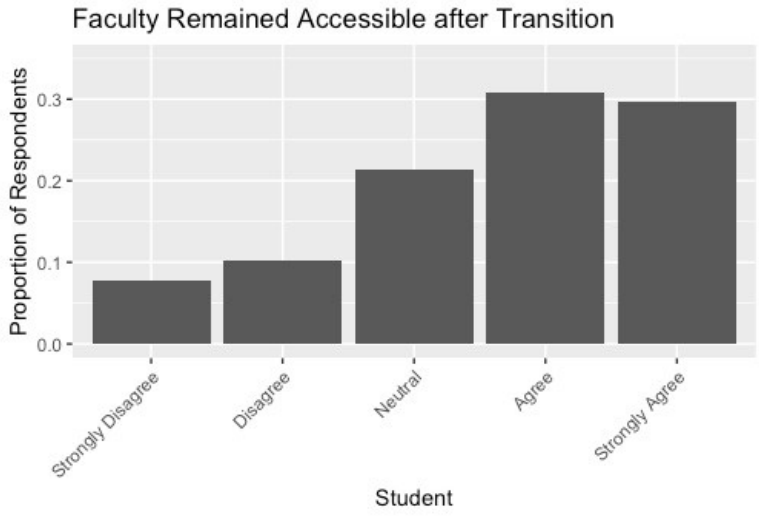
Course Administration

Responses reveal a disconnect pertaining to workloads after the transition to a virtual environment. Faculty were asked "I significantly reduced the course workload for my students after transitioning to a virtual environment," to which only 9.62% either agreed or strongly agreed. Conversely, 67.31% either disagreed or strongly disagreed that they reduced the coursework. Should additional online or hybrid courses be necessary for the Fall 2020 semester, TAMIU could consider providing clearer guidance going forward to clarify expectations for time commitments in a virtual environment. In her research, Beer (2019) presents a framework for setting workload expectations, relying on past work that demonstrates the relationship between workload tensions and dropout rates in online courses. Faculty could benefit from working with course designers on TAMIU's E-Learning team about what constitutes a balanced workload that enables students to meet unit and course objectives.

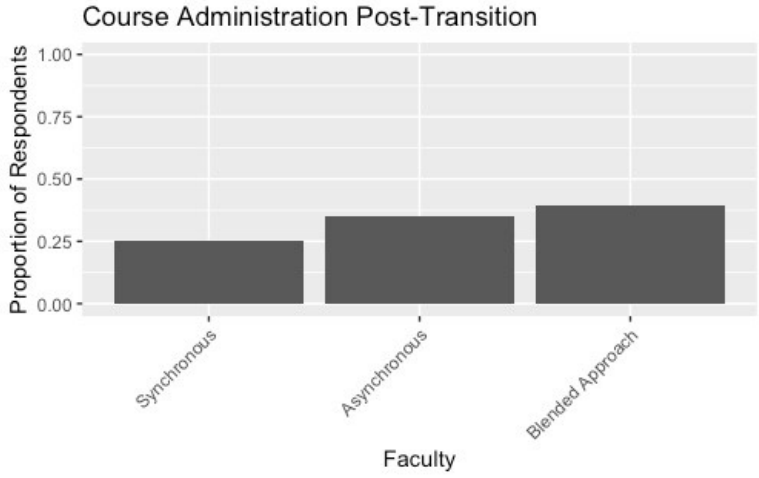
To assess workloads from a student perspective, students were asked "My professors set reasonable course workloads for me after transitioning to a virtual environment," to which 34.16% either disagreed or strongly disagreed, while 46.92% either agreed or strongly agreed. While most students felt that workloads were reasonable, a reasonable proportion of the sample dissented.



Overall, students remained satisfied with faculty accessibility after the transition to a virtual learning environment; with 60.49% reporting either agreement or strong agreement; this is in line with what TAMIU's Institutional Assessment Office found in their report analyzing comments from informal student evaluations after the transition. Only 19% of respondents (n = 44) disagreed or strongly disagreed. This finding suggests that the faculty retained their commitment to student success by engaging with students and being responsive even after the virtual transition. Faculty noted incorporating new technologies, such as Blackboard Collaborate, Zoom, WebEx, and other platforms for remaining in communication with students. Additionally, TAMIU gave faculty access to Jabber through the VPN allowing faculty to maintain access to their office phones and voicemails remotely. To ensure a commitment to student accessibility, faculty could consider continuing to incorporate these technologies moving forward. For example, a Blackboard Collaborate session during office hours could facilitate student participation and accessibility to faculty members even if the student is unable to physically come to campus during that time. Some faculty reported that by using virtual office hours, after the transition to an online environment, they were able to offer expanded availability to students (i.e. additional office hours). Thus, these technologies can help faculty and students better connect in a virtual space.



Course administration post-transition varied broadly with faculty choosing synchronous, asynchronous, and blended approaches. 10.61% of all faculty respondents commented that they recorded their lectures and made them available to students online via Blackboard or other platforms, such as YouTube. 15.15% of all faculty respondents also reported incorporating Blackboard discussion forums into their courses as a way of continuing learner-learner and instructor-learner interactions post-transition. 7.58% of all faculty respondents incorporated new platforms (outside of Blackboard) into their courses, including: WebEx, VoiceThread, and Statecraft Simulations. Notably, 10.61% of all faculty respondents noted no changes to their pedagogical approaches after the transition to a virtual learning environment.



Faculty used a wide variety of platforms to communicate with students. Blackboard and its various functionalities were predominantly used to communicate with students, including through Course Announcements and Course Messaging. For those who used video sessions, most respondents mentioned Blackboard Collaborate, though other platforms were also used, including Zoom, Skype, WebEx. E-mail and phones were also commonly used by faculty to communicate with their courses; one faculty used a Google Voice number while another reported giving students their cell phone number. Other methods of communication used by faculty included via

Facebook Messenger, faculty-monitored WhatsApp groups, text messaging, and the Remind app. Faculty were resilient in transitioning to an online environment, using a variety of platforms to facilitate interactions between instructors and learners. As previously mentioned, Jabber allowed instructors to communicate with students while away from campus over the phone without releasing their personal contact information to students. The University should consider maintaining this capability to continue enhancing faculty accessibility.

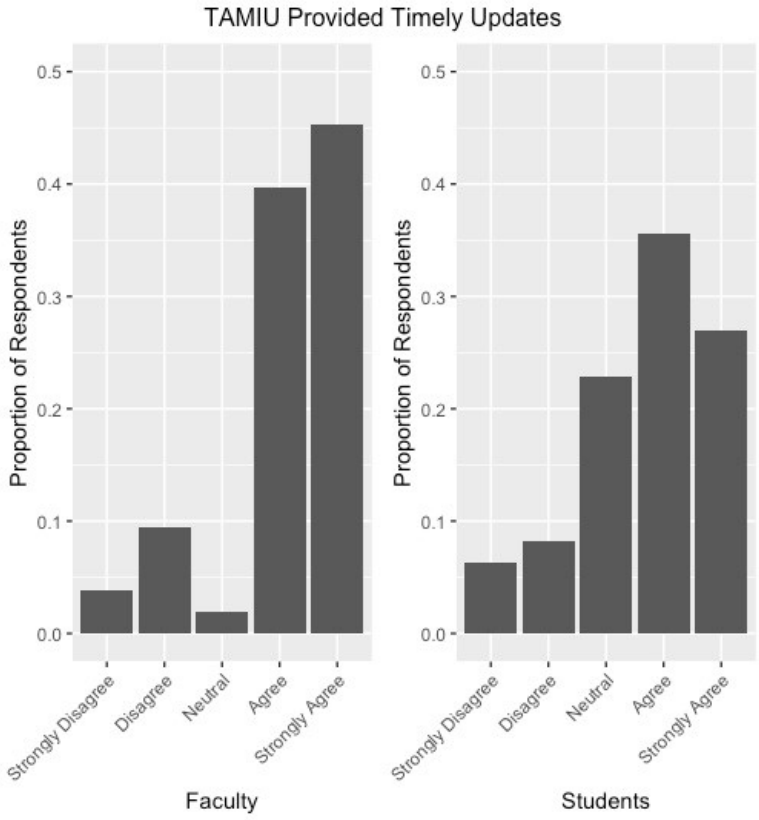
Faculty Communication Methods

Type of Platform	*N*
E-mail	51
Video Sessions (e.g. Blackboard Collaborate, Zoom, WebEx, etc.)	45
Blackboard Course Announcements	44
Blackboard Course Messaging	37
Phone	20
Remind App	3
Echo360	2
Text Message	2
Facebook Messenger	1
Faculty-monitored WhatsApp groups	1
Google Docs	1
Google Voice	1
Statecraft Simulation	1

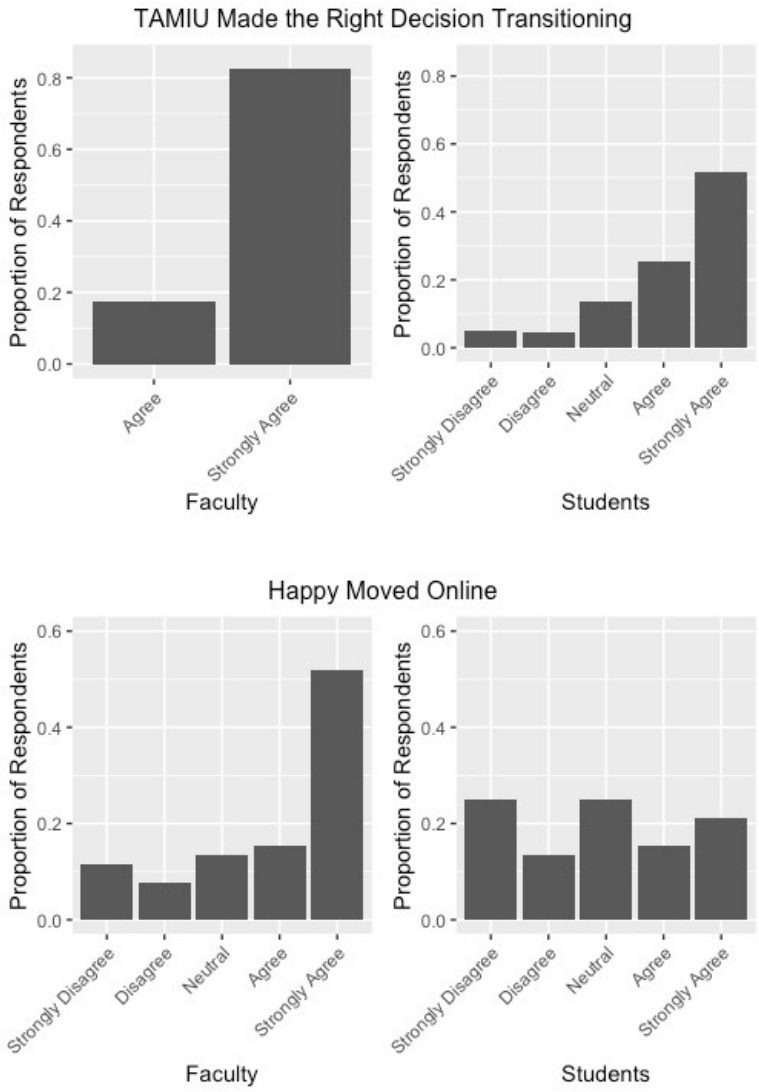
Overall Attitudes

Both faculty (84.9%) and students (62.55%) largely agreed that TAMIU provided timely updates to the campus community related to the transition and resources. The University's administration regularly communicated with the campus community via e-mail and through TAMIU's dedicated COVID-19 website providing faculty and students with updates. A small proportion of faculty (13.2%) and students (14.61%) felt that the University did not provide timely updates. Because information was passed down the chain of command, it is possible that delays at certain levels may have contributed to dissatisfaction. For example, if a dean were to hypothetically convey information to the department chairs about a certain event but the chairs did not relay that information to the faculty, it could create confusion amongst the faculty, particularly if they are

hearing about updates from colleagues in other departments. In the qualitative section, one faculty member noted that they had to cut material because students did not participate in the course the week after Spring break stating that the students "thought it was an extension of Spring Break." However, instruction did not occur during that week as that was time designated by the University for Instructors to migrate their courses. The University could consider streamlining the flow of information in a timely manner from upper administration to faculty members.

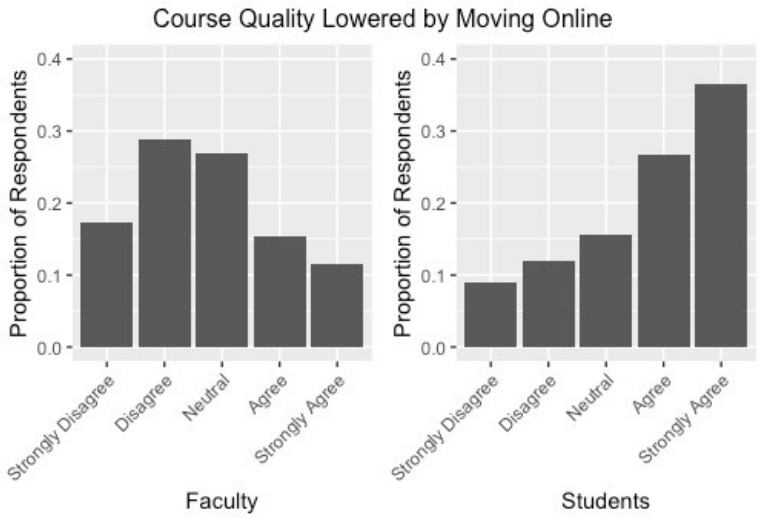


The majority of faculty (100%) and students (76.99%) respondents believe that transitioning to a virtual learning environment after spring break for the duration of the semester was the right thing to do. The decision to transition was in line with the plan implemented at most major research institutions across the United States and abroad. While there was agreement about the need for a transition, attitudes toward the move deviated by category. Students were split in their support of the statement that "I am happy that my courses were moved to a virtual learning environment" for the second half of the Spring 2020 semester; conversely, the majority of faculty members (51.92%) strongly agreed with this statement.

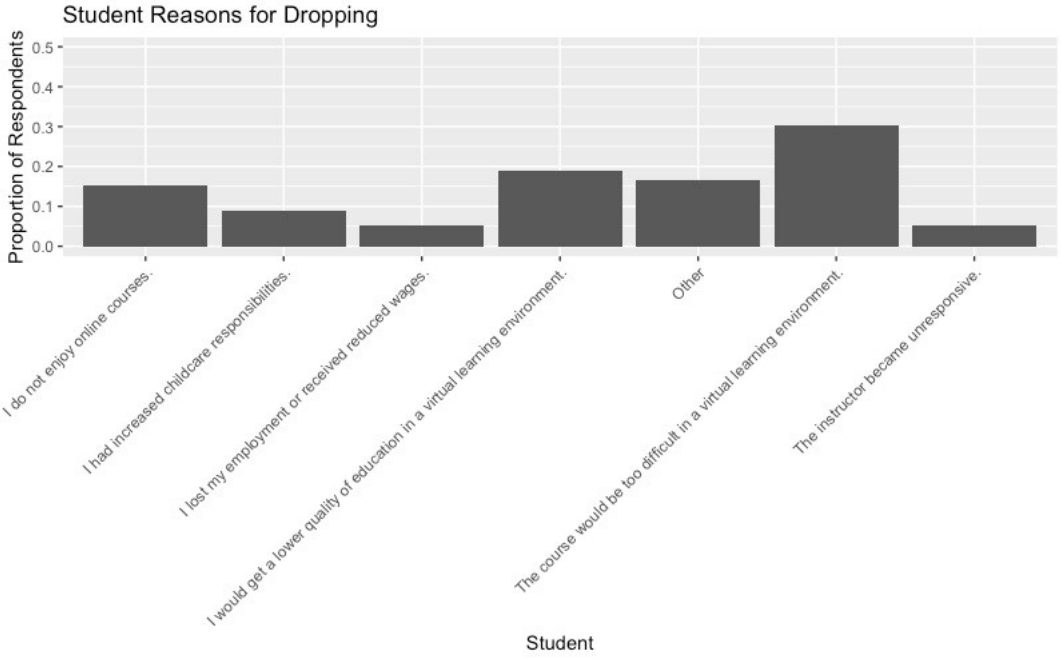


Related to the satisfaction of the transition is the belief that course quality was lowered by moving online. There is a common belief that online courses are of 'lower quality' than their face-to-face counterparts (Tichavsky et al., 2015); however, properly designed online courses are just as effective and have the ability to also engage students and help them achieve their learning outcomes. While only 26.92% of faculty commented that they believed the courses they taught were of lower quality after the transition, 63.38% of all student respondents felt the quality had diminished. One caveat to be noted is that given the circumstances, faculty were not developing online courses – instead, the one-week for preparing online courses resulted in faculty transitioning face-to-face delivery methods into a virtual space. Thus, a perception of quality decline is not fully unexpected, as the development of a true online course involves an extensive investment of time. Future courses, especially hybrid approaches, can benefit from applying the Quality Matters framework into the Blackboard environment. In the event that a hybrid course must become fully online during the Fall 2020 semester due to a resurgence of the

virus, courses already aligned with the Quality Matters framework will be better prepared to continue in a fully-virtual environment at the same caliber of excellence.



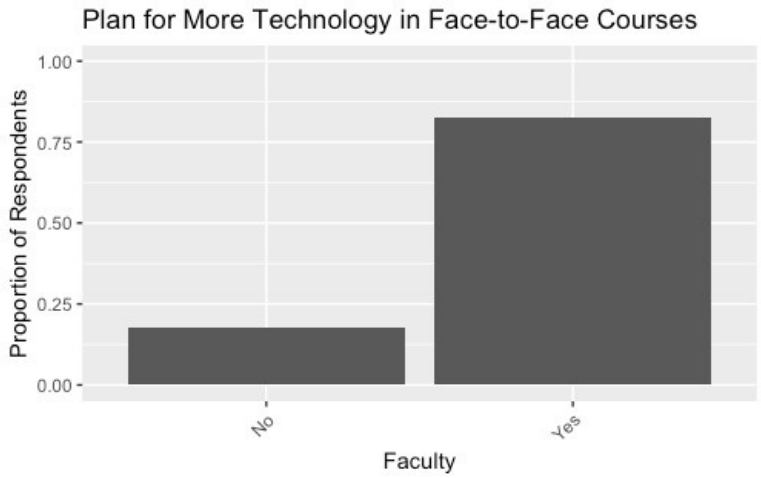
The majority of student respondents (88.89%) reported not dropping a course after the decision was made to transition to a virtual learning environment. For the 11.11% of respondents that did drop a course, reasonings varied greatly. The most common response for why a course was dropped (30.38% of respondents who reported dropping a course) is that students thought it would be too difficult in a virtual environment. Other common reasonings were that students do not enjoy online courses (15.20%) and that they believed they would receive a lower quality of education in a virtual learning environment than if the course were to be administered in a face-to-face format (18.99%).



Faculty Experiences

Most faculty reported a wide variety of benefits resulting from the transition.

While 13.64% of all faculty respondents reported seeing no benefit from the migration, the same percentage also reported feeling more confident in their ability to use technology to enhance their courses. For example, one respondent wrote: "I personally became much more proficient with educational apps and resources that turned out to be really helpful in meeting the student's learning needs." While noting an increased confidence in technological ability as a benefit, 10.61% of all faculty respondents also listed the need to learn new technologies as a challenge of migration. The same percentage reported the safety benefits of transitioning, noting that they were able to continue teaching from a safe location without risk of infection and/or exposure to the novel COVID-19 virus. Overall, 82.35% of faculty noted that they intend to use technology in their future face-to-face courses.



Faculty noted that some students "seemed to come out of their shells" after the transition occurred. One explanation for this change in behavior could be that students having the ability to attend course from a space where they feel comfortable serves as an empowering factor. Some respondents also mentioned that transitioning to a virtual learning environment facilitated interaction with students and provided instructors with the opportunity to connect with individual students, yet others reported increased difficulties in communication. For example, faculty commented that students did not have reliable access to Internet, in line with previously mentioned statistics from the U.S. Census.

Multiple faculty respondents also commented that the transition helped them to rethink their pedagogical approaches and to "think outside the box," allowing them to come up with creative solutions for conveying material in a virtual space. Encouraging creativity fosters an environment for innovation; this could present opportunities for instructors to incorporate novel or innovative pedagogical approaches into their courses to enhance learner mastery of course materials. Respondents also commented on the flexibility of teaching in an online environment and how transitioning to a virtual environment provided them with more time to dedicate to their courses.

Faculty members reported mixed feelings about returning to a face-to-face approach to teaching. Some faculty commented that they would prefer to remain online while others noted a desire to return to face-to-face unless absolutely necessary. One respondent reported that "students are sending constant emails about how much they love the new format." Because millennials have been found to have increased technology usage (McMillan & Morrison, 2006; Stasio, 2013), TAMIU should consider increasing online and/or hybrid courses moving forward. Increased virtual offerings will allow for continued growth in student populations while freeing up valuable classroom space on campus.

When asked of challenges associated with transitioning, the most common theme was student engagement (15.15% of all faculty respondents). Participants reported that students either dropped out of their courses or became less engaged. They also noted that it was difficult to get students to attend virtual course meetings. Given the circumstances, lower student participation was to be expected. The pandemic created stresses beyond the realm of academia which affected faculty and students alike. For example, furloughs and/or terminations of employment added economic stresses, daycare and school closures resulted in increased parenting responsibilities and time commitments, vulnerable populations were likely to feel additional stress related to health insecurity, and access to needed resources, such as food distribution, wellness programs, or medications for physical and mental health were either altered or abolished.

Faculty respondents also commented on transitioning to a virtual environment taking more time and involving a considerably larger amount of work than preparing a face-to-face course. One instructor commented that they do not have necessary programs installed on their computer, which made it difficult to work out problems and develop course materials. Another instructor noted that they "had large classes with 100+ students. It was tedious to grade so many discussion posts continuously." Faculty also reported it taking longer to create content for a virtual environment because they were learning new technologies and platforms and needing to build question pools in the Blackboard LMS taking time. Relatedly, several faculty members commented on the small amount of time given to transition courses from a face-to-face to virtual environment. Respondents also noted the time associated with organizing material within the Blackboard LMS environment and that several reported having to eliminate or change material covered in the course due to limitations caused by the migration. Conversely, one faculty member viewed the transition as positive because they were able to increase the amount of material covered in their course. One respondent also commented that they continued going to the office to work because they were not set up at home to administer courses from there, while another noted that students too faced challenges in working from home due to not having dedicated space. Several respondents commented that they rely on time spent in the library's study areas to provide a quiet space where they can focus on their courses

Student access to resources was a recurring theme. Several faculty members reported students not having reliable access to Internet or facing other forms of technological difficulties. Of note, a STEM faculty member commented that students faced challenges in completing lab assignments after the transition to a virtual environment, due to difficulties in getting students off-campus access to TAMIU high speed computing resources necessary to complete this work. The faculty member noted that it took three weeks after the transition for the Office of Information Technology (OIT) to resolve this problem; however, the delays resulted in students losing

valuable instructional time, which could contribute to student perceptions of course quality being lowered. Another respondent commented on the OIT Help Desk not being able to provide solutions to inquiries, stating "every time I called they could either not help me or told the opposite of what another help desk person told me." The same respondent stated that "[u]ndergraduates running the help desk were in no way prepared or educated to help all of us." It should be noted that while understaffed, OIT took on a monumental role to assist the campus during this transition; however, TAMIU may consider allocating additional resources to boost staffing of the OIT Help Desk for the remainder of the pandemic.

Faculty members also reported challenges related to activity courses. One noted that "It's more challenging to correct students without physical contact. Students are dancing in flooring not suited for dance, so I had to skip certain curriculum that required jumping." Thus, instructors were forced to alter the material covered in their courses, which could contribute to student perceptions of diminished course quality. However, more importantly, the transition posed safety threats for students. Because they were dancing on floors not built for that purpose, faculty members had to take greater care to ensure they were using movements that minimized the risk of injury. The increased pressure associated with this risk could also contribute to increased faculty stress. Another instructor commented that "to get the best dance education experience possible requires at least some face-to-face interaction" noting that the ability to work with bodies in real time is what facilitates the effective transfer of "kinesthetic knowledge."

The importance of teamwork in its varying manifestations was also recurring within the faculty responses. In commenting on their experiences working with a Signature Course team, one faculty member noted that the team "all brought [their] different strengths and experiences to best serve and scaffold our students," noting that they "couldn't have moved forward without the combined strength and resilience of staff and students!" Conversely, a STEM faculty member noted a "lack of cooperation from faculty members teaching shared labs" which resulted in this individual having an increased workload.

Finally, multiple faculty reported personal stresses contributing to challenges post-migration. Faculty reported struggling with adapting to a quarantine/self-isolation environment and increased stress resulting from the changes. Additionally, multiple respondents commented on the need for emotionally supporting students, particularly anxieties and uncertainties. For example, one respondent wrote, "The biggest challenge I have faced is helping my students overcome their fears, challenges, etc." The transition to a virtual learning environment placed a surprisingly strong psychological toll on faculty members, one that many were not prepared for. The University could have provided additional resources to faculty members to assist in this regard. TAMIU should consider providing trainings and/or seminars to faculty participants about how to successfully support students during a time of crisis prior to the Fall 2020 semester to ensure faculty do not feel an increased emotional burden (or to mitigate feelings of psychological stress) resulting from the ongoing pandemic.

Student Experiences

In their qualitative answers, students reported mixed experiences regarding the transition. Their responses commonly mentioned appreciating having the classroom at their fingertips, reflective of Dr. Arenaz's message of encouragement to students when the campus transitioned. Students largely felt that TAMIU made the right decision to transition, noting that they were happy that they could continue their education in the safety of their own homes without risking their health and well-being or that of their families. However, respondents commented that the University's response was not as streamlined as other institutions. One student wrote "I wish they had left from the front and not from the back. They were waiting for somebody else to show them that they needed to transition to Virtual learning. This conclusion should have been arrived at sooner." The same student, and others, commented too that if TAMIU had decided to transition sooner, it would have provided faculty and staff more time to successfully migrate courses and other University resources to a virtual setting before students returned from Spring Break. This was consistent with comments from faculty responses as well.

The most frequent theme was that of an unfair workload. While two respondents commented that instructors reduced the amount of assignments or graded activities in the classes, 50 students wrote that the workload was unreasonably increased. Several students commented that faculty added additional assignments post-transition, with a few respondents claiming that the workload was doubled. Because learners have the ability to pause videos/audio files and rewind to ensure proper understanding and comprehension, which many respondents found valuable, it often takes longer to move through these activities. Thus, a one-hour lecture delivered in a face-to-face setting could reasonably take a student two or three hours to process on their own. Students suggested that TAMIU felt that the transition to a virtual environment gave them more "free time" which is why faculty increased the workload.

While some respondents commented on the value of a synchronous virtual meeting, students reported enjoying asynchronous lectures because they had the option to watch them again to better learn the material. Respondents were appreciative that asynchronous courses provided them the flexibility to work around their changing schedules to successfully complete online courses. When returning to face-to-face instruction, faculty members should consider utilizing the Lecture Capture capability that TAMIU provides to all faculty; this would provide students with the ability to re-watch lectures while studying and improve mastery of course concepts. Respondents also commented that unreliable internet access often resulted in faculty and students being dropped from the live sessions and that the meeting platforms regularly had poor audio and visual quality, making it difficult to understand the material. Additionally, students found it difficult to get instructors' attention when they had a question and reported having questions remain unanswered. If implementing a hybrid or flex method in the future where students are both virtual and present in the classroom, the University should consider ways to ensure student questions from the virtual classroom are being addressed. One possible solution could include designating a teaching assistant or student as a 'class monitor' who would ask the questions in the classroom when a learner writes it in the chat.

Students largely reported challenges with being able to learn or retain information after the transition. Many respondents commented that post-transition, they were memorizing for a test

instead of truly learning the course concepts. A few students reported that faculty members only uploaded PowerPoints for them to review and that they struggled to learn in that manner. In line with the Quality Matters framework and guidance provided to instructors teaching online from E-Learning, faculty members should consider recording their lectures with slides using Echo360 or another platform. This would help students receive a deeper understanding of the material, more closely modeling the in-class experience.

The role of the family played a critical role in student experiences. Many students reported being happy to spend time with their families, noting that their households often include significant others, children, and extended family. Students also reported that being in these larger households means that there are more distractions preventing them from focusing on their coursework. Another challenge, which was also reported in the faculty responses, relates to childcare. With daycares closed, students had increased childcare responsibilities, both in the role as a parent and as a sibling. Students also reported that they had to share devices with other members of their household, further reducing the time they had to devote to their coursework. For example, one respondent noted regularly sharing a computer with four other members of the household, including with minors who were accessing K-12 courses. Students also reported other personal stressed, such as reduced or eliminated employment status, which impacted their ability to focus and complete their courses.

Attitudes towards returning to face-to-face instruction were conflicted. Students were twice as likely to note a preference for face-to-face courses ($n = 24$) than online courses ($n = 12$); however, preference is stratified by discipline. For example, multiple students who also reported strong dissatisfaction with their online STEM courses also noted a preference for face-to-face instruction. One challenge commonly reported was a lack of interaction between faculty and other learners. However, recent reports have provided options for how to build a 'community' in a virtual setting. Faculty members should consider incorporating these tools into their future courses to help enhance social support for the learner. Increasing learner-learner and instructor-learner interactions is also in line with the Quality Matters framework.

Access to resources was a very salient theme. Multiple students reported not having reliable access to the Internet or other necessary software/programs. This is consistent with the faculty report that one respondent tried to get students access to necessary technology for three weeks. One respondent described not having access to a laptop, requiring them to complete all coursework from a cellphone. Some students mentioned that they do not live in Laredo, so going to campus to use available labs was not an option. Additionally, another student who lives in Mexico described having to cross back into the United States to get access to reliable internet service but facing hardships from U.S Customs and Border Patrol not wanting to grant access. The same respondent noted that when conveying these challenges to their professors, some faculty members "did not care" while others did not respond to the student's e-mail. One respondent stated that "I do feel that TAMIU needs to be inclusive. Please remember there are students who do not have the same resources." Some institutions have established programs to provide students with devices. For example, at Norwich University in Vermont, students and faculty are provided with tablets when they first start on campus to use for the duration of their studies. TAMIU should consider seeking external funding for a similar initiative; this would promote diversity, equity,

and inclusion at the University, ensuring all campus members have reliable access to technology necessary to complete their coursework.

Many students commented specifically about encounters with faculty members during the transition. Respondents described how faculty members went above and beyond to transition courses to a virtual setting and to successfully navigate students through to the end of semester. Student respondents named several faculty members who they believed went the extra mile to promote learning and student success during the crisis. These faculty members are Drs. Jerry Thompson (Regents Professor, Department of Humanities), Roberto Heredia (Regents Professor, Department of Psychology and Communication), Aaron Olivas (Associate Professor, Department of Humanities), Ruby Ynalvez (Associate Professor, Department of Biology and Chemistry), and Angelique Blackburn (Assistant Professor, Department of Psychology and Communication). Students also described how many faculty members were flexible with deadlines and worked with students to help them achieve success.

However, students also expressed some negative feedback about faculty members during the virtual transition. The third most frequent theme in the student responses was that faculty members were not considerate or understanding of their needs. For example, one respondent described how they had to miss an exam because of conflicting schedules and "the professor said that they did not give a s***."[3] Another common thread was the lack of availability of instructors. While students reported satisfaction with availability in the closed-ended questions, comments described long delays from faculty members or instances where e-mail messages were ignored. One student commented that an instructor who they named

> "rarely responded to emails and when she did, it would be days later, at times like 2-4AM. She assigned worked without notifying students, and assigned work to be due when Blackboard maintenance was occurring. She left much of our work at school I'm assuming in her office, and never went back to school to get the work that was left there. Me and many classmates ended the class with multiple zeros due to this. We emailed her multiple times in regard to this and were always told "I will be going to campus before grades are due", which was untrue. All in all, my classmates and I have considered going to the dean because of this issue, as it needs to be addressed, and there were many more incidents than what I just mentioned." [sic]

Students also reported faculty members being distant, posting to Blackboard then providing no further interactions. This was often associated with students feeling that TAMIU left them to teach themselves. For example, a respondent wrote "[o]ne professor did not post any lectures or hold virtual meetings, but just sent us third-party youtube [sic] video links, which I thought was lazy." This themes often was often connected with feelings of resentment that students paid high tuition to teach themselves the material. For example, one student stated "We as students are basically paying to teach ourselves the courses. This is on the same level as teaching yourself a subject via YouTube videos at least that doesn't cost us 3K+." Several respondents also commented that faculty members would complain or "rant about [their] personal life."

A large number of students felt that faculty members were largely not prepared to teach online. Several students commented that faculty were unaware how to operate course technologies, such

[3] This word has been redacted in this report for sensitivity and professionalism purposes but was explicitly written in the student comment.

as Blackboard, or how to develop assessments. This reporting is particularly problematic, because in the week dedicated for transitioning, TAMIU offered a series of trainings. However, this could be connected to the shortened time frame where some faculty members may have been trying to learn about the platforms while simultaneously transitioning courses in a one-week period. Students often associated lack of preparedness with inconsistent communication from faculty members in their courses. Many students reported that faculty members did not engage learners after the transition and that several courses presented conflicting information about deadlines and course requirements. Instructors should consider adopting best practices, such as tenets from the Quality Matters framework, to help ensure courses are accessible and that learning tools support course learning objectives. Additionally, TAMIU should consider offering additional training to faculty who have not previously completed the Applying the Quality Matters Rubric (APPQMR) course, as this class teaches best practices for designing virtual and blended courses.

Finally, students also reported positive financial and non-financial benefits arising from the transition to a virtual environment. Several students reported that they were able to lower their gas bills from not having to drive to campus for their courses. Respondents also commented increased satisfaction about not having to search for parking spaces on campus. Related, multiple respondents noted that they did not have to spend time trying to find a ride to campus. By eliminating the commute, students described an increase in the amount of time they had to focus on their courses. Several students also mentioned feeling an increased sense of accountability and improved time management skills resulting from the transition to a virtual environment.

Students enrolled in STEM courses largely reported the same trends as those generalized to the broader TAMIU community. Most students commented that the virtual labs were not helpful, noting that the audio and visual recordings were of poor quality. For example, one student stated that "[t]hey made watching the labs absurd when all you could hear was the fume hoods exhaustion" [sic]. Another student mentioned stopping lab work to focus on lectures post-transition. Students also described how the transition removed the "hands on" element of labs, which made it difficult for them to learn. If labs were to be offered online in the future, instructors could consider incorporating an online program or simulation to provide an active-learning approach to the student. Students commented about the challenges of learning about science from images and that professors often made numerical errors in uploaded lectures or uploaded a picture of their notes as the course lesson. Faculty members could consider taking a more active approach to their courses and incorporate other technologies to facilitate student learning. For example, multiple students described the need for whiteboards to master STEM concepts; some online programs allow faculty members to use a tablet to draw on a white board for the course.

Students enrolled in studio courses also largely reported the same trends as those generalized to the broader TAMIU community. Space was a key concern for student respondents. Multiple students described not having appropriate space or struggling to create a space to practice and/or record themselves dancing for their courses. They also commented on the difficulty of understanding instructions through video. For example, a dancer described how "[t]he video is not mirrored online, so it made it difficult to distinguish the right and left side of the professor compared to my right and left side." Some programs offer the mirrored option, but this is not available in all platforms. Similarly, a music student described how one benefit is to listen to peers play so that students can pick up on their own errors and improve, something that was not

accomplished post-transition, while another described not being able to receive one-on-one feedback from the instructor. While not the same as a face-to-face experience, if offered in a virtual setting in the future, instructors could incorporate technologies, such as Flipgrid, to help students receive this experience and feedback in a virtual setting. One student commented that while they were able to complete her studio art course, they felt extremely uncomfortable because the faculty member openly discussed their dislike for fellow departmental colleagues and administrators. While students were saddened that they transition involved moving from action to writing-based activities, most still reported positive experiences with faculty members.

Discussion

Transitioning to an online environment inevitably poses a set of benefits and challenges. Overall, the University was resilient and came together to continue our mission of providing a quality education to our students. While the transition experience resulted in many benefits, this report also highlights some challenges faced by faculty and students. Most notably, there appears to be a discrepancy in beliefs and expectations within the University. Students felt overwhelmed by coursework after the transition occurred, while some faculty members felt that information was not being conveyed by administration in a timely fashion.

Although students raised concerns about course administration, it is important to note that an emergency transition to a virtual learning environment is not the same as teaching an online course. The successful design of an online course takes a significant amount of time and investment, and task that could not be effectively completed given the short period dedicated to transitioning. Additionally, training in the art of online course design is necessary to ensure the course is accessible and that course learning objectives align with module learning objectives and learning activities, thus meeting the needs of a diverse group of learners. This will also help students with different learning styles engage with their courses.

Limitations

COVID-19 remains a very real threat to Laredo, Texas, the United States, and global communities. Incidents of infection continuously reach unprecedented levels in the State and multiple localities are either nearing or at capacity for their medical facilities. The end of the pandemic is not yet in sight. Regular briefings from leading experts, such as Dr. Anthony Fauci, serve as constant reminders that we must engage in forward thinking to mitigate further disruptions. Because we remain in volatile times, respondent experiences likely reflected a combination of experiences and attitudes inclusive of the time between the start of the pandemic and when completing the survey. While this means that individuals were not all thinking about the exact same time period, this approach is also beneficial because the data does not suffer from recall or history biases from respondents. Additionally, these findings remain highly relevant due to the likelihood of COVID-19's continued impact on higher education into the 2020-2021 academic year.

Recommendations

Based on the findings of this research, we provide six recommendations for TAMIU.

1. Students overwhelming commented on the lack of training for TAMIU faculty members as it pertains to online course administration. If faculty members are to teach in an online or hybrid format, training is necessary to ensure proficiency with the Blackboard Learning Management System and the elements necessary for a successful online course. The University should consider requiring completion of the Applying the Quality Matters Rubric (APPQMR) course for all faculty members prior to designing their online courses. The course provides information on the 42 specific review standards identified by Quality Matters that work to ensure courses are designed in a manner that ensures students can master learning objectives.

2. If courses are to be offered in a blended or online format for the fall semester, these determinations should be made as soon as possible to provide faculty members with adequate time to design a course rather than engaging in emergency teaching. Effective online design involves a significant time commitment; if faculty members are notified of their standing early on, they have the option to use the summer months to design a course that meets the needs of TAMIU's students. Faculty members should work with TAMIU's E-Learning team to ensure courses are compliant with federal accessibility law and established best practices.

3. In the spirit of innovation, faculty members should consider continuing to incorporate technology into their classes. TAMIU provides access to a wide portfolio of platforms, while many others are free to use. For example, instructors teaching face-to-face courses can use the Lecture Capture feature to record videos and make them available for students to view after the class. Other features within Blackboard, such as messaging, course announcements, quizzes, and activities, could also be used to improve student experiences.

4. For faculty members teaching in an online format, they should consider using an asynchronous administration method. Student responses described how personal circumstances, such as changing childcare availability, deviating employment circumstances, sharing of devices with others (including minors enrolled in K-12 programs), all impact a student's ability to focus on their coursework at a specific time. Using an asynchronous approach would provide maximum flexibility for students to learn based on their schedules.

5. To facilitate student learning faculty members should consider posting recorded lectures to Blackboard rather than PowerPoint slides alone. This is in line with the Quality Matters framework and guidance provided to instructors teaching online from TAMIU E-Learning. Recording lectures engages multiple learning styles because students can visually see slides or imagery while also hearing the narrative. Echo360 automatically creates transcripts of recordings which can then be edited and uploaded as Closed Captioning on the recorded lectures.

6. Because TAMIU is a Hispanic-serving institution and Webb County has higher mean levels of poverty than the national average, the University should consider implementing a program similar to other institutions that would provide technology (either laptops or tablets) to all students and faculty. There are options to apply for external funding for such an initiative. Additionally, TAMIU could consider running a pilot study, using either a cohort-approach or focusing on specific disciplines, to empirically assess the likely benefits of wide-scale implementation at the University.

Conclusions

One student respondent best summarized our campus community: "[The transition to a virtual learning environment] allowed me to see how close-knit and loving the TAMIU community is. I loved the way my fellow classmates, professors, and staff all banded together to help each other. It was a wonderful display of humanity." As in institution, we are learning and adapting and will continue moving forward to serve our students and advance knowledge. TAMIU continues to be a family and we are stronger, together.

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