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Teaching and Educational Commentary

Reflections in Adjusting to a Global Pandemic from a Regional Agribusiness Program

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Abstract

Being able to draw upon a long history of distance-enabled education aided the University of Tennessee at Martin's agribusiness program in adapting to a fully online teaching environment during a pandemic. Experiences of agribusiness programs in adjusting to unforeseen challenges are included in the discussion as potential solutions. Feedback was sought from students primarily taking on-campus courses regarding the difficulties experienced and the adjustments made when the campus suspended its normal operations to ensure the health and safety of the university community. Specifically, the feedback focused on adjustment factors for online transition, technological issues and familiarity with the online learning platform, quality of instruction, and students' perceptions of the university's overall response to the pandemic. It was noted that student success in courses during the transition was impacted by their time management skills and efficiency, which are traits desired by employers. While significant differences will continue to exist between on-campus and online teaching, student learning could be improved via innovative strategies to enhance teaching effectiveness in online courses. This commentary shares both student and faculty perspectives during the transition to online and also provides suggestions on ways to adapt to an increased need for distance-enabled learning.

1 Introduction

Even with a relatively long history of distance-enabled learning at the University of Tennessee at Martin (UTM), the recent COVID-19 pandemic created a set of unanticipated challenges. The agribusiness program at UTM provides students the opportunity to learn in either a face-to-face or online classroom setting. This allows students to self-select a learning environment that is most conducive to their situation and educational preferences. However, a global pandemic does not recognize the differences between learning environments and creates challenges even for well-established online agribusiness programs, let alone on-campus agribusiness programs. This paper seeks to highlight the issues agribusiness faculty and students faced in adjusting to educational efforts during a global pandemic. We will emphasize the solutions that made the transition for on-campus students to a distance-enabled learning environment smooth. Firsthand feedback from students in the sudden and unexpected shift to online learning is also provided. The combination of these two contributions will aid in course delivery and student engagement, should continued distance-enabled learning environments be necessary.

2 Historical and Regional Perspectives

The agribusiness program at UTM began offering courses through a distance-enabled learning environment approximately twenty years ago. Initial offerings were in a Master of Science in Agricultural and Natural Resource program. Over the past decade, undergraduate options in agribusiness, farm and ranch management, and veterinary technician management have been added. Delivery of these programs

evolved from correspondence courses to compact and digital video discs to the current online learning management system (LMS). In addition to these delivery mechanisms, UTM agribusiness faculty regularly deliver lectures to the regional UTM campuses via closed circuit television.

These efforts in distance-enabled learning were the result of significant resources being invested by the university with agribusiness being one of a limited number of academic programs taking advantage of the investment. The effort from developing these distance-enabled programs provided agribusiness faculty significant opportunities to experiment and fully develop an online teaching philosophy and pedagogy. This expertise aided in a relatively smooth transition for on-campus students once the COVID-19 pandemic resulted in face-to-face classes being suspended. Agribusiness faculty typically teach in both learning environments, which allowed for easy transition of recorded lectures via the university's LMS.

3 Challenges and Solutions for a Distance-Enabled Education Environment

The abruptness of many universities sending students home in the spring left faculty scrambling to transition material from expected face-to-face class meetings to distance-enabled education. Many of the tried and true tactics to be successful in a face-to-face course meeting were no longer available for faculty to connect with students, while students were upended from their educational routines, which had been ingrained over years of traditional educational methods. This section highlights some common problems faced across universities and provides solutions based on our years of distance-enabled education experiences.

3.1 Availability and Reliability of Broadband

One of the reasons that UTM agribusiness faculty were advised to lecture asynchronously is a reflection of the reliability of broadband internet and its availability for many UTM students. While a significant number of students do come from the Nashville and Memphis metropolitan areas, others do come from more rural areas. Based on statistics from the Federal Communications Commission (FCC), all of Tennessee has at least two providers of broadband internet,¹ with approximately 93 percent of the state's population having at least three providers (Federal Communications Commission 2019). These estimates are somewhat overstated as capacity is an issue in the state² and the reliance on satellite internet to reach stated percentage coverage levels. Approximately one-third of Tennessee's population relies on satellite internet connectivity to have at least two providers in their area. There are stark differences between the urban and rural population in Tennessee when looking at asymmetric DSL (ASDL), cable, fiber, or fixed wireless options in the state (see Table 1). Urban populations are approximately double the rural areas in terms of having at least two broadband internet service providers. For the 7th and 8th U.S. Congressional districts where a significant number of UTM agribusiness students come from, the difference between urban and rural is even starker. Both congressional districts have approximately one-quarter of their population served by at least two nonsatellite broadband internet providers (Federal Communications Commission 2019).

A significant number of students did return home, but there were several who stayed in or near the Martin campus, either in residential halls or off-campus residences. This may have been a reflection of better internet accessibility in their residences close to the UTM campus. We must also note that some students faced additional internet challenges once businesses closed combined with subsequent "stay-at-home" orders issued by municipal and state governments, thereby limiting potential solutions for their limited internet availability.

¹ The FCC uses a download speed of 25 megabits per second (Mbps) to define broadband with an upload speed of 3 Mbps.

² One of the authors was unable to obtain a DSL connection because of a lack of capacity in the area.

Table 1. Comparison of UTM College of Agricultural and Applied Science Students and Broadband Access by Congressional District

Congressional District	Percent of UTM CAAS Students	Percent of UTM Agribusiness Students	At Least 2 Nonsatellite Internet Providers		At Least 3 Nonsatellite Internet Providers	
			Urban	Rural	Urban	Rural
District 1	1.6%	N/A ¹	73.26%	46.04%	29.71%	13.66%
District 2	1.7%	2.9%	86.08%	42.53%	32.76%	12.62%
District 3	1.3%	N/A	86.08%	42.53%	44.69%	9.60%
District 4	7.5%	6.2%	91.13%	50.88%	29.62%	13.50%
District 5	4.1%	2.9%	89.71%	50.79%	6.25%	0.19%
District 6	7.2%	7.6%	76.21%	37.92%	5.66%	3.63%
District 7	21.2%	19.3%	84.62%	26.86%	14.61%	4.38%
District 8	41.9%	40.0%	76.79%	25.24%	11.03%	1.37%
District 9	1.7%	N/A	73.39%	29.16%	1.98%	1.62%
Out of State	11.9%		77.68%	36.00%	28.92%	9.18%

¹ UTM’s Office of Institutional Research was unable to provide data if less than five students majored in agribusiness in a given Congressional district. This accounted for 58 of 275 agricultural business students (21.1%) as of the Fall 2019 semester. Several agricultural business students are still listed as agricultural students as the agricultural business major started in Fall 2019. Source: FCC Fixed Broadband Deployment (2019)

Use of asynchronous delivery methods can be used to provide flexibility to the student so they are not competing against family members during peak times of the day for broadband internet speed in more rural areas. Readers should take into account the information provided in Table 1 does not account for reliability of the connection and whether the internet plan has data caps, which could result in additional charges to the student and/or family if the limit is exceeded. Shorter duration lecture videos also can ease some concerns about straining broadband capacity of the student’s residence.

Given the use of asynchronous lecture delivery methods, our university’s Instructional Technology Center (ITC) indicate students tend to not watch recorded lectures. Data is not currently available from the university’s LMS to provide information on the percentage who watch a lecture in its entirety. UTM faculty has been encouraged by ITC to keep lecture videos to approximately twenty minutes to facilitate easy downloads as well as to maintain student attention.

3.2 Creation and Grading of Assignments

Agribusiness faculty’s prior experience with teaching online provided expertise in being able to quickly re-design assignments for on-campus students who were now completing the semester online. While a significant number of assignments will always be grading intensive and/or primarily writing based, a LMS can reduce instructor’s effort devoted to grading with foresight. Little can be done for classes that are writing intensive, but math-based problems can easily be graded by a LMS. Depending on the LMS, it may offer features such as formula-based questions or numerical answer questions. With the former, the instructor can create a question that randomly generates a problem based on parameters set by the instructor according to a specific mathematical formula, while the latter creates a standardized question where the student types in a numerical answer. Use of formula questions is exceptionally useful in agricultural finance (time value of money problems), agricultural price analysis, and introductory agricultural economics courses (cost calculations and/or elasticities). This can minimize concerns about answers being shared by students in the same course as a specific problem for each student may be generated. Coding of numerical questions in a LMS ignores numerical formatting with the ability of the instructor to set a tolerance range that accounts for rounding differences. These tools help the instructor

focus on awarding partial credit (as necessary) on incorrect answers instead of looking at all submitted answers.

A key consideration when using machine gradable tools is that it requires more work initially on the faculty member. Many LMS systems can be “clunky” when it comes to creating assessments. It does take more time to thoughtfully set up questions in advance that can be self-graded, but the reward pays off when it comes time to grade. This is especially important in large course sections. The ability of students to upload handwritten work or Excel-based answers also aids in providing feedback and partial credit. Use of AI-assisted discussion tools could be a solution as it reduces the time spent grading by faculty (Kiesel et al. 2020), as well as the existing discussion board feature on many LMS.

Students were able to complete assignments on their own schedule, mirroring their ability to watch lecture content in an asynchronous format. The ability of students to enter and exit an assignment over multiple settings (but still just one attempt) until they are ready to submit it for grading reduces their stress. This ability reflects the fact the instructor has set up the assignment to automatically grade it once submitted. In classes where students are encouraged to collaborate on homework assignments, this allows students who are on different schedules time to work together to build teamwork skills.

3.3 Group Work

With employers seeing a university education as a way to improve and develop soft skills needed for their labor force (Andrews and Higson 2008; Stewart, Wall, and Marciniak 2016; Ritter et al. 2018), group work is an effective way to help achieve this objective. However, online learning presents a significant challenge to group projects because of the lack of in-person meetings and differing schedules. The COVID-19 pandemic may result in in-person meetings occurring less frequently, while the ability to work in a team stays relatively constant as an in-demand skill. Our experience, at least in courses initially designated as online, is students are hesitant to engage in group online projects. This can be from prior negative experiences where at least one group member did not fulfill their obligations, resulting in lowered grades for the entire group (even when peer evaluations are incorporated). Given primarily online agribusiness students at UTM account for approximately one-third of total enrollment in the major and are spread across the United States and at different stages in life, their hesitation is at least partially justified. On-campus students have similar concerns even when they are allowed to pick their teammates. Moral hazard concerns among students seem to provide a greater incentive to avoid group work than employers demand for employees who can collaborate and effectively work in teams.

Some concerns regarding group work may be addressed through instructors informing students of available group tools that are often available in a LMS. This helps minimize the need to share cell phone numbers in order to use the popular networking app, GroupMe. LMSs that provide group space within the course often allows students to share files and discussion boards that only group members can see similar to Google Docs. Use of scheduling websites such as Calendly and Doodle can also assist students in setting team meeting times. Instructors may also provide a group contract that includes information to student groups to decide upon meeting times by the members and how long will members have to complete assigned portions of the project similar to the project manager/private contractor approach (Brown et al. 2019). The goal of the contract is not to replace a peer evaluation but to help the team set clear expectations. Students could also be given the opportunity to provide a summary of how they contributed to the project that other teammates are unable to see in an effort to not only engage with their peers in a group project but also provide honest feedback.

3.4 Examinations

Exams pose a different and significant challenge compared with assignments because of the need to assess students’ retention of material and minimizing concerns of academic dishonesty. This is easier in a face-to-face course as instructors can choose to not return exams and visually observe students during an

exam. Use of questions from test banks can achieve exam security as students are not guaranteed to see the same questions as classmates. An effective LMS will provide the instructor with the ability to specify a certain number of questions from multiple test banks in one exam with each bank a different style of question (e.g., multiple choice, true/false, short-answer). Incorporation of formula-based questions also minimizes concerns about math problems being shared among students. There are no easy solutions for classes that heavily incorporate the use of Microsoft Excel. Students can easily share files without the instructor's knowledge as long as the student saves it on either their computer or logs in with their username on a shared computer prior to submission. Awareness of the time when the student submitted the exam and how long it took to complete the exam can aid in Excel-based courses although this is not foolproof.

While assignments are typically available for students to complete on their own schedule, this is not the case for exams. Agribusiness faculty typically allowed students to be able to complete the exam over a few days in one (timed) setting. This compares to allowing students the ability to enter and exit homework assignments as much as necessary before the assignment's deadline. This often reflected that faculty had set up the homework assignment so that the LMS would autograde most of the assignment. This provided students flexibility to complete exams on their schedule and at times when others in their residence are not using shared internet bandwidth. As with much of what has already been said, the key to the success of the aforementioned strategies and techniques is clear communication with the students. To facilitate a successful transition from a face-to-face setting to online for students, clear communication on revised course policies and alerting students in advance of deadlines is necessary.

Our experience with the use of web browser add-ins that prevent use of multiple browser tabs is mixed. These can be used to minimize concerns of academic dishonesty, but can crash the student's browser during an exam resulting in additional stress to the student. Even when the browser add-in works as desired, this does not prevent a student from using a second device to find the answers. There are services that can monitor via recording or having a proctor watch the student during an exam. These are costly to the student because of significant out-of-pocket expenses, and are typically not included in tuition or fees associated with the course. If the instructor makes the students take an exam during a specified time when the latter has to be logged into Zoom or similar software, the instructor should be sensitive to distractions caused by themselves or other students asking questions.

3.5 Reading the Virtual Classroom

Instructors can often take for granted the ability to read students' body language and answer questions in a face-to-face course until its gone. Being able to read the room and quickly clarify difficult content is a skill that is not easily replicated in an online, asynchronous learning environment. Instructors must manage providing the right amount of material they have generated and supplementary internet resources provided by institutions of higher education. This aids the student in having alternative ways to comprehend difficult material in an asynchronous format.

The lack of synergy of being on campus and answering questions in front of the entire course is a difficult hurdle to overcome. With many LMSs providing discussion boards, encouraging students to use the boards as a way to replicate asking questions in front of other students in an on-campus course can be a successful strategy. Students may be hesitant to use this approach, but one tactic that instructors can use is to post questions from relevant student emails and answer them publicly. Even in courses designated as strictly online, students will sometimes take the initiative and answer the questions for the instructor. This helps students feel that they have mastered course content and helps create a connection between students who may not be able to physically interact with each other.

There were difficulties faced in the transition with the loss of in-class activities that cannot be replicated in a virtual learning environment. Loss of these in-class activities can result in increased need of faculty-student interaction on difficult material. Many of the planned in-class activities reflected the ability to have students present in a central location allowing for direct student interaction with their

peers and instructor. Such activities reinforce learning objectives and student engagement, which was not feasible in a virtual learning environment.

3.6 Loss of Camaraderie and Routine

While some of the distance-enabled transitions described were relatively easy for UTM agribusiness faculty to navigate, the loss of camaraderie among the agribusiness faculty and students was noticeable. Students in the Fall 2020 semester routinely comment upon the loss of the camaraderie that occurred once transitioned to distance-enabled learning beginning March 12, 2020. This is not to minimize the challenges that many of the agribusiness program's 350 students faced, but it reflects a conscious decision by faculty to develop a certain type of atmosphere over time and has become a core recruiting strategy for the program. We have already documented some of the challenges with respect to internet connectivity. While many on-campus students had to adjust to a new learning environment with on-demand lectures, a significant number had previously taken an online course while at UTM. Increased use of dual enrollment courses within Tennessee provide students the opportunity to complete general education course requirements while in high school. These individuals can then graduate early given UTM's existing online agribusiness program.

Approximately one-third of agribusiness majors are solely online students and spread throughout the country. The online student population is a different market segment than on-campus students. Not only are there significant differences in this market segment due to age and work status, but also reflecting they are located throughout the United States, not just Tennessee. For online students, they may be more prepared for online learning with better internet connectivity available at their primary workplace or residence. The improved internet connectivity (if not impacted by "stay-at-home" orders) does not offset the stresses of caring for loved ones, working while teaching children, obtaining and providing the necessities of life, and managing businesses during a pandemic, which UTM online agribusiness students faced. Some of these stresses may not have directly been faced by on-campus students, but the upheaval did result in a loss of routine that resulted in many needing to stay disciplined.

Regardless of whether the student is classified as online or on-campus, they did not ask to be in the situation of living through a pandemic. Their emotions ran the gamut of "what does this mean for my upcoming graduation ceremony?" to "how am I going to complete the course with no internet connectivity?" to a lack of discipline that on-campus courses foster by regularly meeting. The latter is one detrimental aspect to providing lecture material asynchronously, even though students seemingly preferred asynchronous lectures as it allowed them to complete courses while employed. As stated previously, we do not know the level of internet connectivity with individual students. Even with students preferring asynchronous video lectures, many did not watch the lecture in its entirety.

An additional strategy to help on-campus students replace at least some of the camaraderie they are missing in an online learning environment is the use of scheduled virtual office hours. These can take many forms, such as a specific time where the instructor makes themselves available for questions to a dedicated question and answer session about an assignment. Anecdotal evidence suggests the virtual office hours are less effective in getting students to attend. This may reflect a similar reticence to use office hours in many on-campus settings or that students feel an email can result in just as effective a solution as attending the virtual office hours. We have had better success with a scheduled virtual meeting to discuss certain assignments. These were recorded for students to watch who had conflicts and later posted in the course's LMS. Many students who participated were reluctant to turn on their cameras due to not wanting to be recorded, as well as potential bandwidth concerns. We did notice that after all assignment-related questions had been addressed, students would engage more with the instructor once the recording had been stopped. This facilitated additional opportunities to relate current events to economic theory. Instructors were also able to gauge how the students' adjustment to online learning was occurring and if additional adjustments to instructional efforts were needed. The stronger the relationship is with students, the easier it is for them to provide information to adjust teaching methods

in the middle of chaos. These conversations also allowed the instructor to put students at ease and clarify the information overload they faced from various university sources.

4 Student Evaluation and Feedback

To better understand student response and reaction to online transition to teaching mid-semester, an online feedback and evaluation form was developed and assigned to students in traditional on-campus agribusiness classes that were being taught online because of the pandemic. A total of 72 completed responses were received. Student response was anonymous, and questions were structured to derive open-ended qualitative responses. Primarily, the evaluation focused on the elements of initial student response to online transition; adjustment factors; technological issues and familiarity with the online learning platform; quality of instruction within a fully online learning environment; and student perception of higher education institutions' handling of situations such as a global pandemic. Student response to each of these elements is summarized below.

4.1 Initial Student Response to Online Transition

The question specifically asked, "What was your initial thought/response when the announcement for moving the Spring 2020 semester to online was made? Discuss your response with respect to the logistics for moving online and concern for your overall performance (grade) in the course."

Most students agreed that their initial responses were primarily driven by surprise in a dynamic situation around the pandemic that was evolving rapidly, and they were overwhelmed with a feeling of uncertainty about what would follow next. Some students initially felt that they would do better in an on-campus environment, the transition to online would be difficult, and would eventually negatively impact their grades. A few students suggested that they were skeptical about moving online because of nervousness about missing important elements of the course that could potentially not be taught well online. From a logistical standpoint, some students expressed being uncomfortable with submitting online assignments; however, in reality it was not as difficult as they had expected.

It was noted that since all students submitting the feedback were agribusiness majors, most of them were familiar with the existing online class environment and had prior experience with at least one online class. Some students expressed concern about internet connectivity at home based on their location. On the contrary, a few commuter students or those that did not relocate back to their hometowns after the transition did not face the internet connectivity issue and were also able to keep their jobs, especially if they worked in a farming environment.

Students perceived the instructor's willingness to help and communicate a key factor that affected their performance in the course during the transition. They also felt that the transition forced them to set aside time to complete their course deliverables and to develop a systematic plan to balance their work-study routine. This was especially true of students who worked a significant number of hours a week as they pursued their degree. A few students who planned on switching to the fully online program in the near future felt that the transition was a beneficial learning experience for them. These students were able to complete the course assignments at their own pace and the transition gave them a "trial" run of how a fully online program works. They also felt that it allowed them to get more work done in one setting, take detailed notes, and study better overall. Some students also indicated that they were able to better realize their potential to use online learning to their advantage, were able to overcome multiple challenges, and perform better than they had originally expected.

Many students felt that it was an exciting transition at first, but became difficult over the next few weeks especially in regard to completing group-based projects. They were concerned about the quality of group projects; coordination and communication among the group members; peer evaluation; and whether they would be able to complete the project as planned. While some responses suggested that their group projects fared well overall, and they were proud of how they handled it, others struggled with

group projects during the transition. The latter also mentioned that they had little to no communication within their group, and as they approached the submission deadline, there was a lot of chaos and confusion eventually leading to a poor quality submission.

Evaluation results also indicated that most students were primarily concerned about their overall performance as impacted by early exam grades. However, as the course continued and they started familiarizing themselves with a fully online learning interface, their performance in the course improved, which was evident from their improved final grades in the course. They were also worried because of the presumption that success in college comes from showing up and paying attention in class. Being fully online may negatively impact their grade point average and thereby the successful completion of the program in the long run. UTM did not provide a pass/fail option because of concerns about financial aid implications and students who were applying to professional schools. Interestingly, some students also looked at the transition as an opportunity to boost their grade rather than to hurt it. When Spring 2020 grades were compared with Spring 2019 grades at UTM, students did a letter grade better.

4.2 Adjustment Factors for Online Transition

The question specifically asked, “How much time (days/weeks) did it take for you to adjust and get accustomed to the fully online learning environment? What was the easiest and hardest part of this transition? Discuss both.”

Responses indicated that for most students, it took anywhere from a few days to up to two weeks to adjust to the transition. The transition to distance-enabled education occurred in the ninth week of a sixteen-week semester at UTM. Flexibility within an online class, as allowed by the instructor, prior experience with online classes, not having to commute to campus every day, and the obvious need for staying safe amid a global pandemic were considered positive factors as the students adjusted to the online transition. Factors that were concerning to the students were keeping track of submission deadlines, inability to meet and discuss content with peers, lack of motivation to learn, and time management. Study habits heavily impacted overall student performance during the semester, depending on the type of learner (visual, auditory, reading/writing, and kinesthetic) they were. Several students indicated that the hardest part of learning in an online setting was to feel as confident in grasp of material following a lecture video as compared with a traditional face-to-face lecture. It was tempting to just skip through the lecture notes or audio-visual explanation provided by the instructor and directly attempt a quiz or assessment. It almost seemed like a false assurance that the student would perceive that they learned a concept, when in reality they may have not fully understood it or may have missed critical information.

The first few weeks seemed more challenging to most students as the instructors themselves adapted to the transition and attempted to adapt to the evolving situation. Some responses also indicated that the time of day a particular assignment was due was also important, especially if they were working. Also, professors had different requirements for online assignments and submissions, and sometimes the format or upload requirements could cause confusion. Most students agreed that being accountable to oneself, using a scheduling calendar, trying not to procrastinate, and keeping ahead of the submission deadlines were helpful during the transition. Some students felt that the assigned time for completing an online exam or quiz was also a concern, as some professors assigned relatively shorter time limits in comparison to on-campus classes.

4.3 Technological Issues and Familiarity with the Online Learning Platform

The question specifically enquired, “Would you consider yourself more technologically equipped with the learning management system (Canvas) now than when you were taking classes on campus? In other

words, did the move to fully online enhance your technological skills for online learning? Anything fascinating or interesting that was a 'light bulb' moment?"

Several students that completed the evaluation agreed to being better equipped with Canvas as a result of the mandatory online transition. They felt more confident using the different tools and features within Canvas, and were more comfortable navigating the system for submission of assignments, quizzes, and other deliverables. A few responses also indicated that they were able to use certain features such as the calendar to their advantage, which helped them keep track of submission deadlines and also being more organized. Some students also suggested that the online transition compelled them to enhance their technological skills, something they would not have to be too concerned about in a typical on-campus learning situation. Further, a few responses highlighted the importance of time zones in online learning. For students located in time zones that were different from that of the instructor, submission deadlines and virtual meetings were hard to keep track of, especially if the instructor did not specify the details in their communication. It was also noted that students felt more comfortable using options such as Zoom, Google Docs, and Canvas groups for team-based projects during the online transition, and this improved their computer skills overall.

While many students had a positive and enhanced learning experience during the transition in regard to the use of computer technology and LMS, about half of the students felt no difference. Additionally, a few students indicated facing technological challenges that may have negatively affected their performance in the online course in comparison to if the course was offered on-campus.

4.4 Quality of Instruction Within a Fully Online Learning Environment

The students were asked, "How would you rate the quality of instruction within a fully online learning environment in comparison to when the same course was being delivered on-campus? Discuss your thoughts on lecture/content delivery, clarity of instructions for completion of assignments/quizzes/exams, engagement, and generation of interest in the topics covered."

Student response in regard to quality of instruction as affected by the online transition was mixed. Some thought that the instructions for most classes were very clear, and there was no confusion on when an assignment or exam was due, while some courses did not have adequate clarity on instructions regarding quizzes, exams, assignments, or other deliverables. Per students' responses, the quality of instruction varied with the professor's teaching style and if the class had a hands-on component incorporated, such as a lab. Classroom distractions were minimal due to the online environment; however, they missed interacting with their peers and the instructors. Virtual office hours or Zoom-based class meetings were helpful; however, sometimes meeting times posed a constraint based on where the student was located, internet connectivity, and the student's work schedule.

A few students also pointed out that they felt that some instructors may have faced difficulties while adjusting and reevaluating their syllabus during the transition, which also affected the quality of teaching. It was also noted that the students perceived the instructor's prior experience with teaching online an important factor affecting the quality of instruction. Students also preferred flexible virtual learning with the use of PowerPoints, audiovisual explanations, and interactive assignments, over live class sessions using Zoom or similar programs. Virtual learning also assisted students with accommodation needs in comparison with live learning sessions.

4.5 Student Perception of Higher Education Institutions' Handling of Situations such as a Global Pandemic

The question asked, "From a college student's perspective, in unforeseen situations such as the current COVID-19 pandemic, what are some steps that higher education institutes can take to better prepare for a

smoother transition to ensure minimal impact on student learning, program completion, and the overall college experience.”

Students agreed that overall the university handled the situation adeptly, given the circumstances and the urgency around the pandemic with limited response time at hand. They felt that it was imperative for instructors to incorporate some online learning components in their regular face-to-face courses for contingency planning, should an emergent situation arise again. Basic online navigation training or instructional videos focused on the LMS for students entering the program was also essential for a smooth transition for students. Students also expressed that proration or reduction in tuition and other fees should be considered for such situations. Continued communication with student success counselors and the Office of Academic Records was also deemed important, especially during course registration for the upcoming semester. Results also indicated that emphasizing the use of the LMS and providing assistance with navigating the university portal as part of the freshmen level general education classes across the university would also help prepare students for such unforeseen events.

5 Conclusion

A prior investment in online agribusiness education eased the transition as a result of the 2020 COVID-19 pandemic for students at the University of Tennessee at Martin, but there were still significant challenges present. The closure of campus in March 2020 led faculty to adjust on-campus courses to a distance-enabled environment for a student population that was not fully prepared for the transition. Findings from this commentary centered around three key areas and concerns that impacted the learning process:

- Internet access and connectivity issues
- Student engagement/camaraderie, and
- Time management and work life balance.

The issue of internet access and connectivity was a primary concern. Faculty utilized asynchronous delivery methods to help students in rural areas with limited broadband internet access. While students without internet access were unable to participate in courses, the use of asynchronous delivery was found to be the best alternative for non-broadband users. For students who lacked experience with online courses, anecdotal and feedback-based information indicated that challenges were faced as a result of not having developed the skills to be initially successful (e.g., time management and discipline to be engaged).

Camaraderie was stated as one of the experiences students missed once the on-campus class meetings were suspended. Despite efforts to overcome the lack of classroom interaction through virtual question and answer sessions and the use of discussion boards, this is an area that could be improved upon. The use of group assignments to promote student engagement was also affected by the online experience and impacted student camaraderie. A plausible solution to enhance the in-person group experience was to encourage students to utilize digital apps to connect and share information among the student groups within the LMS.

Faculty and students had trouble transitioning to a completely online environment. The faculty had to adjust to a different teaching environment while dealing with personal issues and fears associated with the pandemic. While the daily schedules ceased, faculty realized that the added workload of developing online materials and dealing with increased student communication was heavier than expected. Students still faced the tradeoff between increased mastery of one course’s content, which takes time away from other courses, while potentially balancing job and/or familial responsibilities. If distance-enabled learning environments are going to be the norm in at least the 2020–2021 academic year, faculty must accept that students have a myriad of responsibilities that exist outside of a specific course requirement. It would therefore not be productive to increase course assignments under the assumption that students will have more time on their hands from being online. Students cited that some instructors had difficulty adjusting to teaching online, and this impacted student perceptions of the

overall online experience. This issue highlights the need for more faculty training in online teaching pedagogy. Faculty will need to continually improve their teaching portfolios to better accommodate and reach students as online instruction will likely increase in the future.

There are always going to be significant differences between the traditional and distance-enabled learning environments that cannot be easily overcome as discussed in this commentary. However, the COVID-19 pandemic has taught us that there are significant possibilities in online education, and developing new and innovative teaching tools and strategies can be instrumental in improving the overall teaching-learning experience.

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