Zooming In: Online Learning in the Face of a Pandemic

by

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Abstract

The purpose of my research was to gauge the success and satisfaction of the fall 2020 online semester for both students and educators. The literary analysis aspect defined factors that affect online education and what seems to be required for success. The fall 2020 semester had unique circumstances such as COVID-19, forcing many classes online, and the preparedness that factored into the efficiency of online education. Previous research also allowed me to hypothesize how the semester would go; I hypothesized that online education would not be satisfying and successful, especially for students and educators who would not have chosen online education otherwise. I distributed a survey to students and educators asking similar questions about their experiences to discover what worked and what did not for each group. These results exemplified the challenges as well as future potential benefits online education provides.

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Introduction

In spring 2020, the methods of education delivery abruptly changed with the impact of COVID-19 spreading and raising alarms. This was the first sign that the delivery methods of every level of education, from kindergarten to graduate classes at universities, had to change. This change required an adaptation to abide by new, never-before-seen COVID-19 protocols and still be effective enough to maintain a classroom-type setting away from the classroom. The changes in teaching and learning methods opened the door to exploring new teaching strategies and the effects on the success and satisfaction of both learners and educators. Understanding this requires an idea of how to best approach online learning and work around a global pandemic.

First, one needs a better understanding of COVID-19, the concept of a global pandemic, and its effect on schools worldwide. A pandemic like this had never been seen before by K-12 and college students. It took time to understand the severity of the virus and what was needed to protect everyone. Schools were forced into making unprecedented decisions such as nationwide school closings and the movement to online learning. Understanding the growing influence of COVID-19 and how schools had to adapt to nationwide mandates set the stage for how schools handled strictly enforced online courses for the second half of the spring 2020 semester and what was in store for the coming fall semester. This was only the beginning of a world of change.

Students' reactions to an extended spring break, school moving to online-only, and then preparing for the unpredictable fall semester brought a rollercoaster of emotions. The aspect of students' and educators' minimal choice in online learning factors may have

affected their willingness to try and the ability to succeed in these difficult times. With a minimal choice in the matter, both students and educators had precursor perceptions to their own potential success and their ability to complete the semester. Lack of choice can hinder ability and willingness in ways that affect effort and ultimately outcomes. This lack of choice can be seen later in the development of the fall 2020 semester. With this change came new and evolving ways to adapt to what was happening in the world.

The aspect of new resources the school would use came with a multitude of benefits but also some challenges. Live video chats, increased use of e-books, online teaching substitutes, group messages, proctoring services, and many more methods were tried to find what worked best for each individual. Each resource's effectiveness was different and challenged educators to see what worked best as a whole. Educators also had the challenge of what they were able to implement and what they were capable of using. The outcomes of trying these new resources had been seen on a lesser trial scale, and the use of online resources has had success before under more lenient circumstances. The unique COVID-19 circumstances brought a new challenge that exposed unforeseen issues and upsides to online learning on a significant scale. This thesis will investigate the perceived success and satisfaction that both educators and students encountered in the fall 2020 semester. The success and satisfaction is realized through a survey that inquired about the response to the fall 2020 semester.

Additional research has been conducted concerning this topic to gauge potential expectations and compare research and findings. The additional research will allow a comparison of how online education has fared previously compared to how it would go in a forced environment. Some research will also compare potential challenges expected

with online learning on a massive scale and potential benefits to online learning. These findings may also help predict the possible use of online education in the future. These findings set the stage to compare how students and educators were affected by learning changes in the fall 2020 semester.

The following research topic reveals how students and educators learned from the experience of the fall 2020 semester. It details how students and educators worked well together in this environment and how issues hindered this learning environment. A survey allowed both students and educators to express their opinions on similar matters involving the fall 2020 semester. The survey included questions such as, “what are the benefits to online learning?” and “did you learn as much online as you could’ve in person?” and will allow a comparison of students' and educators' experiences. The research gauges the students' and educators’ success and satisfaction and pinpoints what education needs to succeed. This thesis has the opportunity to open doors to making accessible online education effective, usable, and efficient.

COVID-19's Takeover

COVID-19, otherwise known as SARS-CoV-2, is a respiratory virus that originated in Wuhan, China, before it spread across the globe. COVID-19 is described as a "contagious emergent pathogen for which there is no previous immunity, available vaccine or effective treatment" (Adolph et al. 211-233). COVID is spread when an infected person exhales, and small droplets of the virus are exposed. These droplets then enter in mouths, noses, or eyes of healthy people and infect yet another person. The CDC emphasizes how easily and rapidly COVID can spread. Touching your eyes, mouth, or nose after coming in contact with the airborne disease or touching surfaces that harbor the disease can make a person extremely susceptible to COVID. The contagiousness makes COVID so dangerous; it is more contagious than the regular flu and most other diseases and can have fatal and lasting effects on those who encounter it. According to National Geographic, COVID-19 attacks the body by infiltrating the lungs. From there, it attacks the Alveolus cavity, where fluid and debris start to build up as the body fights to protect itself. This makes it harder for the lungs to process carbon dioxide into oxygen resulting in "shortness of breath and pneumonia" (Canales, Stegmaier, and Maggiacomo). The effect on the lungs can be fatal to those with previous health concerns and can impair and permanently damage the lungs of healthy people.

According to the Center for Disease Control (CDC), symptoms include: "Fever or chills, cough, shortness of breath or difficulty breathing, fatigue, muscle or body aches, headache, new loss of taste or smell, sore throat, congestion or runny nose, nausea or vomiting and diarrhea" ("Symptoms of COVID-19."). The number of symptoms brings

along a new challenge of diagnosing the disease and recognizing and beginning treatment as soon as possible. COVID can also spread from people who are infected but show no signs of the disease. As of the writing of this thesis, the COVID-19 dashboard by the Center for Systems Science and Engineering (CSSE) at John Hopkins University (JHU) on September 18, 2021, shows total global infections at 227,870,139 and totals global deaths at 4,682,672. This shows how unbelievably infectious this disease is and the repercussions that can ensue if not taken seriously.

It quickly became vital to socially distance to stop the rapid and exponential spreading of COVID-19. The dictionary defines social distancing as "the practice of limiting physical closeness and contact with other people, especially to avoid catching or transmitting an infectious disease." This became the primary way people could fight against COVID and protect themselves and those around them by stopping the spread. The World Health Organization declared COVID-19 a Public Health Emergency of International Concern on January 30, 2020. This was only days after the United States had its first positive case of COVID-19 on January 20. Washington state recorded the first case after a person returned from Wuhan, China, after traveling for treatment (Erwin, Paul C, MD, DrPH, Mucheck, and Brownson 647-651). The state governments then each had different approaches to handling the spread of COVID-19. Washington was the first to act when on February 29, Governor Jay Inslee declared a state of emergency following the first COVID-19 related death. A state of emergency occurs when the nation faces danger or disaster, and the government suspends standard constitutional procedures to regain control. This was viewed as necessary so that states could instantly minimize the

spreading of COVID-19 by enacting stay-at-home orders or shutting down social gatherings, and enacting other social distancing measures.

Soon the rest of the states would each follow in shutting down to stop the spread of COVID-19. Tennessee reported its first case on March 5, 2020 (Adolph et al. 211-233) but did not declare a state of emergency until two weeks later, waiting until March 22 (Adolph et al. 211-233). Regarding closings in Tennessee, Tennessee shut down most significant gatherings between March 22nd and the 27th, and Tennessee's COVID timeline indicates schools were closed March 17 (Weiler). In Christopher Adolph's paper "Pandemic Politics: Timing State-Level Social Distancing Responses to COVID-19", Tennessee's response shows a slower response to COVID overall in terms of social distancing. Tennessee was within the last 15 states to shut down almost everything: gatherings, school closures, restaurant restrictions, nonessential closings, and last to enforce stay-at-home orders. It became vital to the protection of the people to stop interacting until the virus had died down. This directly impacts the switch to online learning; it began with spring break.

Spring break 2020 for Middle Tennessee State University was the usual March 9th through the 14th, but then it was extended to the 22nd by the president. When classes resumed, many would-be remote, and many students would not return to campus. Remote classes are defined as a meeting of students and educators outside the classroom either asynchronously or synchronously. Asynchronous learning is where educators and students meet at different times and different places. There is no set meeting time; students are required to get their work done and can do it on their own time. Synchronous

learning is where educators and students meet at the same time but in different places. This began to set a precedent for the coming fall semester.

Remote classes would be the major option students and educators had to learn and to teach. With the fall semester on the near horizon, MTSU had to learn from the brief quarter semester of a remote setting in the spring and prepare for the online semester to come. This brought challenges with educators needing to have the resources and knowledge to do their job successfully and the challenge of reacting to the student's response to change. A significant factor on both sides was the lack of choice; most of the classes were online, with no exceptions. This played a role in the acceptance and willingness to participate in the coming online semester. Forced, undesired online learning is not how students expected or wanted a semester to go. This new form of education for both students and educators became a challenge that seemed to be inevitable. A distaste for online learning may have originated from the lack of choice; many students could have been open to online learning on their terms. The same goes for educators; many who may not have preferred to teach online had no choice but to begin reformatting lesson plans to fit online learning. Choice became a significant factor in the overall opinion of online education in a COVID-19 world.

Choice

Choice was a significant factor in the acceptance and willingness to transition to online learning in the fall of 2020. Students and educators both had a minimal option in choice: they could participate in some form of online education, possibly take an in-person class, or take some time off school. This was a significant change for most students and even educators who may not have participated in online classes before the fall of 2020; their perceived knowledge of online classes would guide them in deciding how to continue. The concept of perceived knowledge on online education affected students' willingness after factoring in significant deterrents. Educators had a different experience with the main options of teaching or not teaching. They also had to consider expectations of how feasible it would be for them to teach online and address their challenges.

It should be known that online education is not an entirely new concept and has been around before the pandemic. As put in by McIssac and Gunawardena, "It (online education) has currently become the fastest growing form of education." This shows the market that has been around and the growth it has been experiencing for some time. Other researchers state that "web-conferencing was introduced in 2008" (Ellingson and Notbohm 555). Also, Daniel R. Ball's article states that "…it has been reported that more than half of all colleges find online learning essential for their institutions and that online course enrollment has increased by 33%" (Jackson and helms, 2008). Online education began to find its way into universities and schools with the expansion of its capabilities. The room online education has to grow is better exemplified by the 15% of the

educational market it took up in 2018. It would be expected that this number would rise after the switch to online learning in the fall of 2020. Students and educators would get to try out online education, something they may not have previously done.

An article called “Effects of Knowledge Types on Choice Quality and Perceptions of Choice Performance” by Coupey and Narayanan begins with the idea of the knowledge behind a decision. This is what influences choice with a cost-benefit type analysis. They would measure the cost to the benefit; for example, is the potential semester worth the effort or struggle of online education? The article goes on to state, “Knowledge is a frequent and desirable component of decision making for choice” (Coupey and Narayanan 715). This highlights students and educators' unique situation during the fall 2020 semester; they had to decide on an unfamiliar topic. Knowledge about a subject guides users to make informed and rational decisions, getting what they want from their decision. This lack of knowledge limits the user’s freedom with the limited ability to make an informed decision but having options gave students and educators the ability to decide what was best for them. According to Ian Carters’ article titled “Choice, freedom, and freedom of choice,” “For any two alternative options x and y, having options x and y gives a person more freedom then only having option x” (Carter 61-81). This shows how the school tried to incorporate choice and availability for the students and educators. There were options for online education, potential in-person classes, and scheduling flexibility to give students and educators comfort and familiarity. With a limited but diverse assortment of online options, students and educators had to take in what they knew about online education to make their decisions.

For many students and educators, online education was not the preferred choice for delivering learning material simply because it was a new, unfamiliar concept to them. More educators had most likely come into contact with online education before. Students were either for it or did not prefer it; each party had a preference in both instances. In an article titled "Online Education in a Pandemic" by the Ronkowitzs, they touch on a significant factor in the opinion of online education, "Many lacked preparedness to go online for the first time. Others were not prepared to go fully online" (Ronkowitz and Lynnette Condro Ronkowitz 187-203). This shows the division; some had never attempted to go online, and the rest were not completely prepared to spend a semester fully online. Students and educators started to factor in losing campus services, meals, housing, technology, social interactions, and other perks. This only seemed to increase the challenge and loss they would be facing. The workload could seem overbearing for both parties, and staying on top of their work was a new challenge with the lack of accountability. Online schooling can seem more isolated, with less interaction and support. They continue to state, "Time self-management when learning online required discipline" (Ronkowitz and Lynnette Condro Ronkowitz 187-203). This exemplifies a heightened responsibility of discipline and getting work completed while not being under as much supervision. "Under the new circumstances, it was more important than ever to stay on task" (Ronkowitz and Lynnette Condro Ronkowitz 187-203). Diving into this unknown was an intimidating choice.

This section will focus on precisely what helped students succeed and to who online education is better designed. According to the article "Motivation factors in self-directed informal learning from online learning resources," "Learners have increasing

choice over the timing, contents, and path of their learning (Song and Bonk). This highlights that new forms of learning apart from the traditional classroom setting had begun to give students and educators more options than before COVID-19 on how and when they wanted the learning material delivered. This has allowed some students to discover how they learn best, whether in the traditional setting or an online setting. Educators also found or solidified in what ways they prefer teaching.

This article by Song and Bonk also highlights a particular type of student, referred to as an informal learner. These are students who realize their situation and adapt accordingly to what will be required to succeed. The article mentions the concept of self-directed learning. They defined it as "a process in which individuals take the initiative, with or without the help from others, in diagnosing their learning needs, formulating goals, identifying human and material resources, choosing and implementing appropriate learning strategies, and evaluating outcomes" (Song and Bonk). This attitude would be required to thrive in an online learning environment, but not every student has this. Some students cannot diagnose their learning needs and require more guidance from the educator to walk them through lessons or concepts to emphasize the main points. Identifying resources could have been complicated with the distance between students and the campus; students would be required to rely on themselves and nearby resources. All these factors played a part in the students' choice and the willingness for them to participate.

After students and educators considered what they knew about online education, the challenges, and what it would take to succeed, they had their chance to try it. Both parties had to try it out and discover what each class would require and the response each

class would need. Maha Mourad's article "Students' adoption of an open access online education service, an exploratory study in an emerging higher education market"; covers the attributes that will affect the adoption rate of online learning. The attributes were "the relative advantage of the innovation in terms of its cost-benefit analysis, the compatibility of the innovation with existing values and needs of potential adopters, complexity, trialability, and observability" (Mourad 604-617). The first attribute relates to the cost-benefit concept regarding the value-added and what it costs to obtain it. Was the cost of completing this semester worth it if it meant partaking in online education? The second attribute is the compatibility of online education with what students and educators are familiar with and already know. It had to be a feasible switch. This familiarity would make the switch more accessible and as comfortable as possible, which would increase success. The third concept was complexity. Would this switch to online education simply be unbearably hard? It had to be an easy switch that flowed and was doable. The fourth attribute was trialability; this does not particularly apply because there was no option for a trial run. The fall 2020 semester would be majority online, with no time for practice. Lastly, observability, will this benefit future semesters? This will show what worked and what could have gone better. This will also set the example of the circumstances this type of switch is necessary. These are all factors that online education needs to answer to ensure a smooth switch for students and educators. Ensuring these attributes were essential to making online education seem appealing to students and educators in the fall of 2020.

With the start of the fall 2020 semester, it was hard to gauge the reaction and the acceptance of the forced online education setting. It can potentially be predicted when

compared to other circumstances with similar options. For example, in the article “Does Dissatisfaction with Health plans stem from having no choices?” by Atul A. Gawande, the situation of having a minimal choice may have some effect on acceptance and satisfaction. The article states that “Prior surveys have found that persons who were forced to enroll in managed care were significantly less satisfied with their plan and the care than were managed care enrollees who could choose a traditional fee-for-service plan” (Gawande et al. 184-194). This parallels the fall 2020 semester in the fact that compared to semesters where students and educators had a choice in education delivery, it would seem they would be less satisfied. The force to and lack of options created a less enjoyable experience and left people unhappier than those who would have a chance to choose their own option. The article continues to say, “…having a choice even among care plans improved satisfaction” (Gawande et al. 184-194). This would seem to limit students' and educators' satisfaction during the fall 2020 semester without getting any more options throughout the semester. This sets a precedent that, most likely, the level of satisfaction would be lower than a regular semester where students and educators can choose how they want to take their classes.

Choice was a factor that seemed to be excluded in the fall 2020 semester but had a bigger impact on potentially determining satisfaction, acceptance, and willingness. It shows how the limited options for online education were not ideal and that this is a new circumstance with the effect of COVID-19. There was more at play in the adoption rate and that this type of delivery could be more catered to specific students and educators. The perceived challenges and unknowns of online education created hesitancy in the

desire to partake in the semester. Online education provides different delivery methods that bring choice back into play for students and educators.

Forms of delivery

When it comes to material delivery, there are three main ways in which educators present material to the students. These ways are the traditional way students and educators may be used to, a hybrid format or a type of online format. The online format goes a bit further and can do done in a synchronous or asynchronous mode. This gives both students and educators a couple of options regarding how they want to be taught and how they want to teach. The traditional format has been the most predominant form of delivery because most people are familiar with it. Starting in kindergarten through high school, the traditional delivery method is the most popular method. Educators may have a bit more variety in teaching methods because they have more options for online teaching, but historically traditional is the most used form. As online presence increases, the opportunities in online education continue to increase and make education more accessible to those looking for it.

The article "Transition and Migration to Online Learning Environment," defines the traditional delivery method as "Teaching/Learning is accomplished in a physical educational environment" (Richardson and North 5-28,105). This is how a "regular" classroom is perceived. Students come into class, talk, and sit at their desks and then listen to the teacher lecture at the front of the class. With the traditional face-to-face delivery, a huge social aspect is diminished in other education delivery formats. The article "When classroom interactions have to go online: the move to specifications grading in a project-based design course" states that "Student-teacher and student-student interactions are key to scaffolding learning as students learn content and complete their

design project" (Quintana and Quintana 525-532). This reinforces the concept of social interaction and the importance of the role it plays in both student and educator development. These relationships are exemplified by these interactions, "teacher-content interactions with developing lessons, student-student interactions with course material, teacher-student interactions, and student-student interactions" (Quintana and Quintana 525-532). These are four main interactions that the face-to-face classroom gets to participate into the highest degree.

These interactions are the biggest benefit to the traditional classroom. The teacher-content interactions where the educators plan the lesson differs here than they would in an online delivery method. In the face-to-face method, they can prepare more individualized lesson plans if certain students are struggling or the class has more questions than usual. They also can assist students with technology problems and have the opportunity of one-on-one with students. Student-student interactions with course material gives students a chance to help teach each other. Sometimes a student can explain a concept in a way that the teacher cannot, and it may make more sense for other students. Also, the opportunity to be in a real classroom can help a student focus, ask questions, and participate. Teacher-student interactions can benefit both parties in a relational instance, simply making the classroom an enjoyable, safe space. Teachers also have the opportunity to lecture, provide examples, and gauge how the class responds to the lesson. Lastly are the student-to-student interactions, this peer feedback, and relationships created. For a lot of students, school is where their social interaction originates. They may not have a lot of social interactions outside of the people they see at

school. While a traditional classroom setting is what most students and educators are used to, it does still have its drawbacks.

With the traditional delivery method being so prominent in education today, the drawbacks can be overlooked. The drawbacks can be seen as student-specific in most instances. In some cases, several students are stuck with the rest of the class as they focus on a specific concept. Some students may be ready to move on to the next concept but cannot since they must stay with the group. Another drawback is the time commitment; there is not very much flexibility in a traditional classroom setting. Due dates are set, and class meets at specific times multiple times a week. Educators and students have committed a certain amount of time each week to participate and study and prepare independently. Lastly, another main drawback is the lack of variety in delivery. Traditional can be seen as lecturing with few other resources. In other delivery methods, there are a plethora of learning resources that are used and accommodate every type of student. If the student struggles to learn in a lecture-based class, the student may not have many other options to learn and study the material. As online education continues to grow, students and educators are given more opportunities to find what works for them.

The next form of delivery is the hybrid method. Ronny Richard defines Hybrid or blended learning as: “Learning occurs by combining traditional and online formats” (Richardson and North 5-28,105). This can be seen as a potential best of both worlds, the familiarity of traditional learning and the flexibility and resources of online teaching practices. In the article “Evaluating the effectiveness of audio in hybrid courses” by Daniel R. Ball, he mentions the effect of less classroom time and the fact that “…instructors need to re-examine what teaching techniques are most appropriate” (Ball,

Mosca, and Paul 73). In a hybrid course, in-class time is reduced by half, and the rest of the material delivery is substituted by an online source. In other words, almost a new class design must be created compared to the traditional classroom setting. He hypothesizes that the new structure looks like a very accessible and flexible form with the opportunity for a lot of dialogue and less structure. This allows the benefit of flexibility and includes the possibility for interactions and the intentionality of the few face-to-face opportunities.

With this potential perfect mix that hybrid learning provides, there are some major benefits. One main benefit is the ease of educators in delivery. They do not have to be the ones to teach every aspect of a topic. Hybrid learning brings in new resources that can suffice for lecturing and cover minor parts of a lecture so the educators can focus on more specific parts. This allows educators to drill down complex topics and focus on the most critical aspects of a lesson while a prerecorded lecture prepares students for these lessons or covers what wasn't covered in class. Another main benefit is the accessibility hybrid courses offer. Students have more control of their time regarding studying and completing the online portions of the class. Educators also benefit from this accessibility with the online resources that fill in for some days. Instead of multiple classes every day, they will have some days where the class isn't meeting, and they are freed up to get done whatever they need. Lastly, the resources that come into play with a hybrid course open so many doors to finding a better teaching/ studying style. For students, prerecorded lectures and other online teaching alternatives give them many options to study. With these options, students can understand how they learn best; whether rewatching lectures or answering practice quizzes, they can find what works for them— educators also have

the opportunity to discover different avenues of material delivery. They can continue to lecture but also can introduce online books, websites with practice options, or lectures from other sources. This allows them to find what is comfortable for them and effective for the student; more choices of materials increase the chance for students to learn. With all the potential benefits hybrid learning brings, it also has its drawbacks.

One of the first major drawbacks is the lack of face-to-face interactions. This has the effect of students feeling more on their own when it comes to studying and teaching. In some instances, according to "Understanding factors that influence attitude and preference for hybrid course formats", "…students felt they needed to teach themselves" (Baker et al. 174-188). The feeling of teaching themselves comes into play with the introduction of distance in the classroom. This effect of students teaching themselves could also be part of another unfamiliarity; this is at play for both educators and students. For students, not understanding how to access all the potentially available resources can be a waste; in this instance, they are getting almost nothing out of class. This also aligns with the educators; if they do not provide the available resources, students miss out on nearly half of the class. This can once again bring in the feeling of isolation for students and create issues with educators who do not know how to use their resources. Lastly, there is the factor of motivation that comes into play in a hybrid type learning environment, especially for students. Without a physical educator present, students could slack off or let their work pile up if they do not stay motivated and on top of their work. Online sources delivering materials in new, unfamiliar ways may make simple work seem daunting, increasing time spent on it, or it makes work seem too easy, and it becomes unprioritized and rushed. Unfortunately for the educator, there is not much they

can do regarding accountability except for the few class meetings they have. Simple reminders and emails may not do the job of motivating the student. Hybrid learning environments open doors to freedom in the classroom, but with a new method come unfamiliar challenges. Next, rigorous online learning continues to push freedom as well as more changes.

When it comes to online learning, the opportunities seem endless. Immediately online learning is divided into two main parts, synchronous and asynchronous delivery. Synchronous online education consists of meetings that happen simultaneously but at different places, and asynchronous online education meets at different times and places. Examples of synchronous classrooms are Zoom meetings or web-based meetings a group participates in from wherever. On the other hand, asynchronous would look like people covering material at their own pace and time whenever and wherever they please. There are almost no interactions between group members, and they can work through the material at different paces. Each mode provides its own benefits and drawbacks.

For synchronous learning, web-conferencing resources are used that allow the class to meet virtually in some form. The focus of these web meetings is to make the class as interactive as possible. Many web-conferencing is defined as "…allowing students to interact live with the instructor and other students via camera and microphone and also through a chat (messaging) box" (Ellingson and Notbohm 555). The article "Synchronous Distance Education: using Web-Conferencing in an MBA Accounting Course" follows the success and the challenges that a web-based synchronous class goes through. It covered a multitude of benefits that synchronous delivery provides that help make the class seem as familiar as possible, such as options to participate, ask questions,

interact with students and educators, and rewatch recorded lectures. The main benefit of synchronous learning is the freedom of meeting from wherever students are. Students and educators do not have to commute to class to benefit from the lecturing and class involvement. This freedom continues to expand with the introduction of the recorded lectures and resources provided by the conferencing resource. Their article lists benefits for both students and educators that synchronous delivery offers. “For the students, these include increased motivation, preparation, and participation; collaboration and community building; use of technology; and convenience. Benefits for the instructor and university include access to remote students and alternative platforms for delivery of instruction” (Ellingson and Notbohm 555). This reinforces the idea that synchronous delivery can reap the benefits of a traditional classroom while pushing students to do better and exposing them to new ways of studying and technology. For educators, that opportunity to reach remote students opens the doors of education to everyone who wants to participate. Also, alternative ways of teaching allow educators to reach students who may struggle with the lecture-type classroom setting. This continues to push students to succeed with more ways to achieve success. With these benefits, synchronous learning still has its drawbacks.

The drawbacks to synchronous learning come from the concept of an online class. A major drawback that gets introduced is a greater reliance on online material and students' motivation. With more freedom, a greater responsibility to get the work done is required. Educators on this end still only have so much they can do with sparse meetings and the distance between them. Educators must trust students will ask questions and continue to complete their work. Another major drawback is the reliance on technology.

If an online resource goes down at any point, educators and students could get behind in their work or miss out on opportunities to participate. Most of the time, neither the student nor the educator do anything wrong or can do anything to fix it. Also, the availability of technology comes into play in certain circumstances. Students must have access to the internet and a computer of some sort to have this option at all. If they do not, they cannot participate, which is something educators cannot control. Lastly, faculty investment has a major effect on how the class will function and perform. For example, a less invested or capable educator could create challenges and hinder the class unintentionally. The article states, "…a faculty member needs to learn how to manage the class in a new environment" (Ellingson and Notbohm 555). They must be comfortable with their resources and understand how to incorporate every student and keep everyone engaged. This comfortability can limit the class to what is available or what works like it is supposed to. Synchronous learning is only half of the online opportunities and does its best to incorporate familiarity with class meetings.

On the other side of the online learning spectrum is asynchronous learning. This form of learning is a lot more distanced. Educators provide a syllabus or outline of the semester, and students can usually complete the required work at their convenience if everything is on time. There are fewer forms of accountability as the student may never meet the educator or other students. There are usually no meetings as a group, and students work at their own pace. There are benefits to a majority-distanced education method, according to Kalyani Chatterjea, such as "Freedom from time and space" (Chatterjea 37-54). In the asynchronous class setting, students and educators are the freest to complete their work when they please. This allows them to participate in other

activities, whether social responsibility like a club or a necessity like working full time and still being in school. This gives the opportunity of education to the most people with so much availability to participate in class. Students can also enroll in school they otherwise would not be able to attend without geographical restrictions. Another benefit, according to the article, is "IT immersion" (Chatterjea 37-54). This is a way to ease both students into technology they may use in their career and educators who have the chance to try new resources that may enhance learning. These two main benefits allow asynchronous education to be expansive and available to potentially everyone. Even in its universal potential, asynchronous learning has some unappealing drawbacks to some students and educators.

The challenges with asynchronous learning go hand in hand with synchronous learning but to a greater extent. For asynchronous learning, the almost complete elimination of interactions between students and educators can be undesirable. Students can be seen as isolated in this circumstance, only getting instruction from a computer or website. The educators also have very little idea of how the students are faring in these types of classes. Educators can judge by grades and emails from students how they are doing but can only do so much to check up on the students. As it was previously mentioned, student motivation is a major factor in the success of asynchronous learning. In Chatterjea's article, she hits on the element of motivation with the discovery that "…54% of the participants commented that there are scopes to stray on a fully web-based course" (Chatterjea 37-54). This illustrates the outside factors that distract and hinder material delivery. Asynchronous learning can also be more time-consuming because students do not have immediate guidance from their educators. This can also develop

from technology issues. With technology issues, students and educators can both get behind and struggle to meet deadlines. They may also have no way to fix their issues. Technology issues continue with the reliance on students' and educators' ability to use the technology required. If either side is unfamiliar with what is required of them, they will struggle to succeed as a student or guide the class as an educator. Tech-savviness is a denominator in the effectiveness of asynchronous learning and one that can be improved as the class goes on; it would just result in a game of catch-up. These drawbacks are specific to the increased distance in asynchronous learning. These drawbacks are more factors that guide each individual student and educator in the decision on how they choose to participate in online education.

After the choices are evaluated, it comes down to preference on how a student or educator wants to participate in online education. In the case of the fall 2020 semester, a choice had to be made, what type of online education did the educators and students prefer, and was it even an option? After reviewing the factors involved in choice and options available, expectations are drawn on who would choose what and why. An article titled "The Socratic Clicker" mentions that "In particular, the current student is more technologically savvy and places a high priority on multitasking, whether in the classroom or dining hall" (Tasto, Randolph, and Cullen 58-65). These observations begin the split into different groups with different preferences. This first one opens the doors to expecting the students to be more accepting of the technology. Even still, each preference is different for every unique student; there is still a group that may not prefer multitasking or is able to succeed while doing so. Each student must compare the available options and pick what caters to them the best. They can decide on the length of distance between the

classroom and the intentionality they want based on each method. For educators, the fact that the traditional classroom is still the predominant form of delivery shows that maybe educators are not as open to changing their ways. They have a preference and have found what works best for them. Educators did, although, have the opportunity to try and cater towards what the students may have wanted. However, in the fall 2020 semester, they learned the traditional classroom was a minimal option that very few classes accessed. They had to embrace change to continue teaching.

Lastly, there is the comparability between the different methods of learning that can be seen in "Traditional, Hybrid and Online Teamwork: Lessons from the Field." This article provides insight into the comparability and the contrasts in the similarities and differences of how students and educators reacted to the different delivery methods. There is a difference between this article and the thesis, the external factor of COVID-19. Online education has been tried before in trials but has never been forced upon students and educators as a whole. Starting with the traditional method, they begin by commenting on the interaction and the "learning from others" (Elizabeth Avery Gomez, Wu, and Passerini 33) that takes place in a traditional setting. Either between students or with educators, participants in this mode have more opportunities to reinforce learning. However, time becomes a challenge in this mode because everyone is on the same timeline and has to wait on one another. There is also less work completed outside of the classroom, which means more has to get done in class. Students who are ready to move on in the lesson have to wait on those who are not prepared, and the educator has to follow up with every student making sure they are ready to continue. This highlights the opportunity for positive change in traditional delivery methods.

In the hybrid method, the article immediately emphasizes the change in physical interaction. It mentions the mix of "face-to-face instruction coupled with "out-of-class (online) computer-mediated instruction between class meeting times" (Elizabeth Avery Gomez, Wu, and Passerini 33). The article mentions that the key to success in the hybrid method is to get the most out of synchronous interaction whenever possible. Everything that can be done individually should be done that way, so the few face-to-face meetings are as productive as possible. The major challenge they found was the lack of conformity in turning in assignments from students. Some would stay on task, and complete homework or whatever was due before the deadline, and some would wait until the last second and turn in not the highest quality of work. This would also spread out the educators' work as they cannot complete grading until they receive all the work. This dragged out the educators' responsibilities and allowed tasks to stack as the semester went on. So even in a different delivery method, there are still opportunities for positive change.

The biggest benefit to the online delivery method is the flexibility that comes with it. Students and educators can take these classes and still participate in a social or work life, with school not taking a major portion. There is also the positive that some students are more comfortable contributing and participating online rather than speaking aloud in class. This allows more students to contribute as they have more comfort in simply posting to a class discussion board. For educators, the increase in educational resources helps ease their responsibility as these resources can provide lessons and even auto-grade work the students turn in. Regarding the challenges faced, the article mentions the lack of synchrony in that students complete their work at different times of the week, and the

educator must cater towards students' availability and when they complete tasks. Another challenge the article mentions is the factor of too much flexibility. With class activities taking more time online than in a traditional classroom, students can get behind as they expect immediate completion. They must wait on feedback and potentially help from other classmates. Too much flexibility increases the odds that work does not get done, or the class isn't taken as seriously as it should. Still, with a new positive being reached, drawbacks can hinder the finding of a perfect classroom.

When comparing the primary delivery methods for the fall 2020 semester, traditional was a doubtful option, and hybrid, synchronous and asynchronous were the leading choices for students and educators. Choice factors into the decision with the willingness and acceptance of unfamiliar delivery methods for both parties. Each party had to decide based on what they knew about each method, what they would choose based on what was best for them. If they desired distance, they had an option of asynchronous, or if they desired the interactions between students and educators, they had the option of hybrid or even synchronous. Each party learned the challenges and positives of each delivery method and had to adapt and overcome them throughout the semester. This semester allowed online education delivery to be examined to discover what worked best for students and educators and what did not work. This will allow online delivery to be revised and built to work for more students and educators.

How To Meet the Need

At first, the new, unfamiliar education delivery style is much different from what most students and educators are familiar with. This change comes with both potential for benefits and challenges that hinder this ability to thrive. There will be challenges to adapt to and factors to consider ensuring a successful and satisfying learning environment. If these factors can be met and achieved, a higher quality of online education will be fulfilled for both students and educators. The benefits can first be recognized as the ultimate goal to understand what is needed in online education. Next, the challenges and types of students that emerge from online learning can also be viewed as a goal set to adapt to the challenges and create successful students. Finally, the factors that must be met to warrant an overall successful and satisfying online learning experience must be considered. Online education will prosper and become more effective as these benefits, challenges, and factors are understood and conquered.

The benefits of online education can be endless. The benefits of the pandemic circumstances forcing most students and educators to participate in online education will benefit both online education and the overall effectiveness of educational delivery methods. It will allow students and educators to discover new methods that better cater to their learning preferences. Every student is different, and every educator is different, so what works best for one may not work the best for everyone. Since education has primarily been conducted in the traditional, face-to-face method, most students and educators have found a way to succeed in or familiarize themselves with these methods. The experience of the new delivery methods during the pandemic will help weed out the

practices that work well and the ones that do not work well or are not as effective as others. It will also allow for the introduction of new methods into the traditional classroom method. The different delivery methods will become more intertwined and build on each other to become a more specific method that can be individualized for each classroom and every student and educator who takes part. Online education will also allow more students and educators to participate in online education when they otherwise would not have that option.

Online education is exceedingly more accessible when compared to a traditional classroom setting. Students and educators can participate from anywhere and, in some cases, at any time they need. This emphasizes the flexibility that online education provides, which is one of its biggest benefits. In the case of COVID-19, it allowed education to continue in the safest and most practical way possible. As it is a different method than many are accustomed to, it can be easy to learn and adapt to in the world of technology students, and educators are surrounded in today. As online education has continued to grow, new methods and resources have allowed educators to cater to the students and allowed them to try and recreate the traditional classroom feel, even at a distance. Even with the effort to create a familiar experience with online education, there are challenges that online education needs to address and criteria that need to be met.

Starting with the challenges that online education faces, there are three as defined by a study "Online learning and emergency remote teaching: opportunities and challenges in emergency situations." The study lists technological problems that refer to the challenges related to technical issues like connectivity and any other issues with electronic devices. Even access to electronic devices that would allow or disallow

participation can be considered problems, and for many of these problems, educators cannot control or provide an immediate solution. These issues are something that educators will have to be aware of and attend to as needed. The fix to these issues may be flexibility in working around them, as many are uncontrollable. The next challenges involved pedagogical challenges. The study state that the role of the educator changes, “Pedagogical patterns must be different in virtual classrooms. The educator is more like a moderator and consultant in the virtual classroom, and lessons cannot be arranged like a physical classroom. Therefore, learning, especially guidance and feedback, should be given in a different way” ("Online Learning and Emergency Remote Teaching: Opportunities and Challenges in Emergency Situations."86). The change in role calls for the educator to adapt and change their teaching patterns and influence. This will be something the educators have to figure out as class ensues and may be a changing experience as the class works through a semester. Lastly, the article focuses on social challenges. In general, this is the factoring in the loss of interactions and how these interactions can be reintroduced in an online environment. Interactions between students and educators play a vital role in the effectiveness and enjoyment of a classroom; without these interactions, online education can lose its interest and effectiveness. These challenges call educators and students to face these challenges and adapt to create a successful and satisfying learning environment.

Another group of factors that can provide a challenge and indicate a benefit is the use of the learner matrix. This matrix shows the relationship between time and active engagement or flexibility. The four sections of the matrix are induced learners, rote learners, traditional learners, and mature learners. To decipher between the learners is to

understand the difference time and active engagement and flexibility have on the learners. Induced learners are defined as "This is the early learning stage when the topic or the subject is introduced to the class, and the students are encouraged to learn" (Mukherjee and Hasan 56-78). This is a student that has low exposure to time and active engagement as well as flexibility. This is an unpleasant learning experience as it can be rushed and not hold the student's attention resulting in deficient learning. The second learner is the rote learners, defined as "This cohort primarily compromises of those students where excess content is provided with limited time to learn; thus, in place of conceptual understanding emphasis is more on memory-based learning" (Mukherjee and Hasan 56-78). These students have been provided many resources to study and learn the material but are counteracted with a short amount of time to do the studying and learning. This results in a memory-based learning environment where retention is not completed, but students only know what is needed for the upcoming tests. Thirdly, are the traditional learners who learn best through the traditional classroom setting. They rely on classroom teaching and do not teach themselves or reinforce what they may need. These students are created with the excess factor of time but an unengaging and inflexible classroom experience. This put more emphasis on the educator having to ensure the students are attentive and retaining the information. Lastly are the mature learners who engage in the classroom and take the time on their own accord to succeed and have a satisfying educational experience. This is what will need to be created in an online education environment. As time continues to be a significant factor in online learning, educators will have to create an engaging and flexible classroom environment that will ensure the creation of mature learners. To have mature learners, the students still have a

responsibility to do their part and take the time outside of class to study and do whatever they need to succeed. Students and educators will have to work together to navigate this unknown terrain of online education and create balance; there are a few concepts that may need to be achieved by both sides.

Then, factors that guide online education towards a more successful experience are beginning to become known. These are recommended aspects of online learning that need to be focused on to better the experience for both students and educators. In an article titled "Integrating students' perspective about online learning: a hierarchy of factors" (Van Wart Montgomery et al.), seven factors are listed that will increase the quality of online education as gauged from student reactions. The first factor is instructional support, which concerns the educators' teaching techniques. The delivery methods need to be interactive and engaging as well as involve multiple forms of media. The online classroom has to find ways to recreate the support an in-person or traditional classroom would have. The next factor is teaching presence, which relates to the "quality of communication" (Van Wart Montgomery et al.). This factor has to be addressed as lectures, feedback, and the class flow can depend on the communication between educators and students. The educator has to be engaging and put forth effort for online education to be successful. Next is the factor of basic online modality. This is the comfortability of both educators and students with the technology used in the classroom. Both sides have to be able to participate and contribute to the class for it to work. Next is the factor of social presence, which is another form of interaction but specifically student-to-student interactions. These interactions are essential as students can assist each other in learning the material or simply interacting to enjoy the class. Along the line of online

modality is another factor noted as online social comfort. This focuses more on the educator's ability to create a comfortable online environment where students feel safe to interact and contribute. This is important as online classrooms can be uncomfortable to some students, leading them to feel distanced from class and not participate. Second to last is the factor of cognitive presence, which is the perception students have on how engaged they are in the class. The class environment should be simulating and challenging to draw students in and keep them engaged. Lastly is the interactive online modality factor. This factor encompasses the usage of multiple modes of online delivery. This creates the opportunity for students to find the best learning method for them as the educator provides more options. This also can reinforce concepts as students learn concepts multiple ways and allow educators not to have to reteach every concept to every student. The usage of numerous resources gives the student more responsibility to do what they need to learn and less on the educator to be involved constantly. These factors are just some of the many that researchers have found beneficial.

In the next study titled "Online learning before, during and after COVID-19: observations over 20 years", Kollias makes five conclusions that factor into the success of online education and capitalize on the opportunities online education provides. The first conclusion is the necessity to "redefine online learning" (Wieland and Kollias 84-92). Online learning can be done in multiple ways; each way can be unique and still effective. The trial of new ideas and techniques can improve online learning as discoveries about what works better or best are made. Second, is that educators need to be involved. They need to have a say in what is necessary for online education and what is necessary for educational resources to do their job successfully. If they can create what they know they

need, educators will be able to do a better job once they are properly equipped. Third, the learners need their voices heard. They also need to have a say in what works and what is not working in the online environment. This will refine the online education concept as both sides understand what they each need to succeed. Fourth, technology needs to be embraced. Technology is ever-changing and should be used in online education. It should be leaned on as a cornerstone, guiding the capabilities of online education. Lastly, great educators should be cared for and supported. They are the ones who inspire and educate students and should be appreciated for it. These observations and factors are leaders in the structuring of online education and consider everyone who is affected.

The benefits that online education could provide are only obtainable if the challenges it faces are met. These challenges affect students and educators as the different and new classroom experience pushes them out of their comfort zone. These challenges can be reduced as various factors of online education are considered. The factors help ensure a smooth and efficient online educational experience for everyone. Other observations and considerations are also used to understand online education and what is needed in this environment. These benefits, challenges, and factors are each met and answered differently between the forms of delivery.

Resources

Each delivery method uses different resources that cater to the students in unique ways. These heavily depend on the educator in what they want to provide, what they think they need to provide, and what they can provide. Based on how the educator teaches, usually defines the resources that the students have available during class and outside of class to study or rework. As the distance increases with each delivery method, the available resources begin to change and rely more on the student choosing to use them. In all cases, for the resources to be effective, the student must have them available and use them, but what the educator makes available changes. Educators set the tone with available resources, but students still must take the initiative to get something out of it.

In the traditional setting, the main lecture the educator delivers is the most significant resource. Students follow along and take personalized notes during class, catering towards what they think they need to remember and writing things out in ways they understand best. Textbooks and PowerPoints go alongside the lecture in a way to reinforce it. Textbooks and guided notes also give the students an outline of the lesson and allow them to follow along during the lecture. These resources are translatable to outside the classroom as students study these in preparation for the exams or quizzes. Sometimes practice problems are either covered in class or provided to the student outside the class. Videos are rarely offered in a traditional classroom setting as most things are covered in the classroom. The biggest resource is the availability to ask questions while in class. This allows the student to inquire about specific topics and receive immediate, focused reinforcement where they are struggling. These resources will

enable the class to flow smoothly and cover what is needed in each class. Students must also pay attention in class since these resources are mainly available then. If they miss out on them, they might not be provided elsewhere after class. These resources are catered to immediate feedback or the educator being the main factor in personally providing the resources. Slowly, the educator will phase out of being the one to provide these resources.

In a hybrid setting, distance is beginning to come into play, making the educator less available. There will still be lectures where the educator gets to speak on the topic and teach it engagingly. Guided notes and notes taken by the student are still used to follow along with the lecture and retain essential aspects of the lecture. PowerPoints, if used, will be available to students to look back over and study as exam time grows closer. With less time in class, the textbook becomes a bigger factor in students beginning to teach themselves or revisit topics that give them trouble. In a hybrid setting, recorded videos become a factor as educators may have more material they need to cover that did not get covered in the few class meetings they have. These may be prerecorded videos that continue the lesson plan or lectures that were recorded in real-time so students can revisit and relisten to the lecture. Students will still be able to ask questions, but they will have fewer opportunities for immediate feedback. They will always have the option to email the educator, but it can take time for educators to respond to every email they get from a student. Students begin to have more time on their own to study or look over these resources. Time and distance continue to factor into the use and availability of educational resources.

For online education delivery, the resources start to separate themselves from the educator. The educator makes them available as the semester progresses, but they are less involved in the students studying, if they are involved at all. There is a much greater responsibility for the student to learn anything they missed during the lectures independently. In a synchronous setting, web conferencing resources such as Zoom and Microsoft teams are how lectures are usually delivered. This brings in factors of circumstances for the educator delivering the lecture and the student trying to take it in; with background noise and technology issues, these resources lose their effectiveness. Prerecorded lectures and recordings of the zoom meetings become a major resource for those who miss the lectures or need to rewatch them to enforce a topic. Whether physical or online, textbooks become a factor that students can learn from if they are struggling with a topic. Here students still have the availability of asking questions, but communication on zoom can provide issues and challenges in simple communication, but there is still immediate feedback. Other online sources besides the educator come into play for homework or lecture-type information. These resources guide students through topics or allow opportunities to practice what they have learned. When it comes to exam time, proctoring services like Examity and Proctorio watch over students as they test to deny the opportunity of cheating. The educator must have a level of trust with the student with an increase in distance to do their work and do it honestly. Slowly, the learning process is more dependent on the students' participation and less on what the educator does themselves. There becomes only so much the educator can do to get the student to succeed; the student will be ultimately responsible.

Asynchronous delivery comes with almost a complete removal of the educator, as the students will most likely never meet the educator since there are no class meetings. Prerecorded lectures and other videos become the primary way the students get the material. Students can still take notes and are often provided notes to guide them through the videos, and the videos stay available to be rewatched whenever needed. Also, other online websites become a more significant part of the delivery of the material as they are catered towards walking someone through a topic and reinforcing learning it. Online websites may include a textbook or something that provides practice problems and answers questions. There can be a delay in feedback from the educator as emails take time to respond, and they receive many from many students in different classes. Online exams and proctoring resources ensure honesty during testing and show that students have learned what they need to. This method is very reliant on the student almost having to teach themselves. Students will also have the most flexibility and time in this environment, which they can use as a resource. Time becomes a resource when students prioritize their studying and get done whatever it is they need, whenever they can to excel in the class. With the almost complete removal of the educator, the student must put in extra effort to get the resources they need to succeed. Resources can be endless as students search for other ways to succeed even if the educator didn't provide them. The students' biggest resources are themselves and their desire to succeed. Resources change with distance and flexibility, and each party must find a way to work together.

Each method provides different opportunities for the student to learn; the educator does what they feel is necessary for the students to learn what they need to. As the educators phase out, they may have to provide more resources to ensure the students'

success. Students also take it upon themselves to use the resources available and use what they learn best. In a new environment with the COVID-19 virus, both students and educators must try new things and step out of their potential comfort zones. New resources open the doors to better classes or preferences in how students and educators want to continue their education in the future. These resources can both improve or challenge the learning environment, and each differs with every delivery method.

Expectations

As COVID-19 was a worldwide pandemic, the effects of forced online learning were seen across the globe. Many countries and countless schools of every grade were forced to switch to an online method of delivery. The effects of the switch can be compared across the globe and across the United States to hypothesize how students and educators would react and their preferences. Every case slightly differs, and numerous results were written as each circumstance rendered different reactions. This can be compared to what would be the expected reaction of MTSU students and educators as they undergo a similar experience. MTSU worked hard to make available in-person classes, which allowed more options for students and educators. Still, as the world reacts to this change, reactions and outcomes can be expected, and results will ultimately help refine online education.

The first study that will guide expectations is a study from Parul University in India. This study was designed to "…assert the efficiency of online learning in the modern era" (Zaveri, Amin, and Nasabinmana 35-47). They took responses from students who participated in classes at Parul University from March during the COVID-19 pandemic. They collected responses from 165 students ages 18-29, male and female. The majority of the students were second-year students and full-time. They also inferred if the students owned a personal computer, and most (58.2%) said they did. They also concluded the "Time Using a Computer" (Zaveri, Amin, and Nasabinmana 35-47), and the majority (57.6%) have used one for five years or less. Their first section infers on the benefits of online learning with the gain of flexibility. Most of 43.6% agreed to the fact

that online learning "…offers flexibility to both lecturers and the students" (Zaveri, Amin, and Nasabinmana 35-47).

Along with this is the elimination of geographical boundaries; the majority also agreed with this statement (63%). Their next sectioned commented on the "Availability of the technologies to assist in the learning process" (Zaveri, Amin, and Nasabinmana 35-47). The study stated, "It is assumed that e-learning makes good use of different digital technologies that assist in the learning process. The good thing is the fact that it doesn't require any special tools and equipment, just the normal computer, desktop or laptop, smartphone, or tablets, etc." (Zaveri, Amin, and Nasabinmana 35-47). Of the respondents, 106, or around 64%, agreed to this statement, while close to 28% disagreed. This could be because not every respondent had access to a personal computer or another form of technology. These were the main benefits the respondents agreed to; they then began to show what they viewed as effective.

The efficiency of live lectures was studied next as this became a comfortable mode that educators could use to deliver educational materials. It would be expected that live lectures would be an effective mode as it similarly mimics the traditional classroom setting while online. According to Zaveri, "…56.4% of respondents do not think that live lectures are efficient" (Zaveri, Amin, and Nasabinmana 35-47). This could be due to interruptions that can occur while trying to view them online or the fact that there could be more distractions for students if they are not in the classroom. This also shows the changing dynamic that online education brings; the normality of lectures may not be the best way to deliver learning materials online. The next point that was investigated was the reality of immediate feedback. As distance is introduced between the educator and the

students, feedback becomes a longer process as it has to be done through email or a messaging service. This concept had the most extensive spread of opinion as 32.5% thought that they could maybe get immediate feedback, 27.9% disagreed with the idea of receiving immediate feedback. 40.6% agreed that the receival of immediate feedback would be different in a distant learning environment. Lastly, the article inquired about the "Perceived usefulness of e-learning" (Zaveri, Amin, and Nasabinmana 35-47). This got the response that 46.1% of students viewed e-learning or online learning as useful. That left 51.5% of students who viewed e-learning as not at all useful, and 2.4% were undecided. This shows the reality of student perception of online learning. Majority votes "…Not at all useful," which exemplifies the need to discover what works or what will make online learning useful.

The article also investigated the social perceptions of e-learning that may have factored into bias in the effectiveness or opinion of online education. This section examines the views surrounding online education and the levels of recommendations or preference surrounding online education as perceived by social factors such as friends, family, and even the media indicate popularity. In the instance of online education recommendations, only 44.2% could say that a family member had recommended online learning. 53.9% could say that they had been encouraged to study online in some form. This could show that online education does have a positive view in communities. When questioned about hearing positive testimonials from online learning, only 43.6% could say they have heard them compared to the 53.3% who could not say they have heard positive testimonials. When it came to negative testimonials, more students had heard negative testimonials by only 1.2%. This shows a balanced view of good and bad

experiences with online education. The media, as demonstrated by the students, had shown more negative publications about online education. With these results, there can be changes in online education to cater more towards the students and discover what they need to succeed. Educators can also receive help in knowing what they can do to help and the technology to do so.

The authors give recommendations that would improve online education and can be looked at to gauge their effectiveness in other situations. The first recommendation is to "Improve the student's interactions with learning platforms" (Zaveri, Amin, and Nasabinmana 35-47). This would allow online education to flow smoother as students can participate in online learning comfortably. Secondly, it is recommended to "Ensuring efficient course delivery" (Zaveri, Amin, and Nasabinmana 35-47). The courses should be both consistent and straightforward. This would allow students to focus on retaining information, not battling distractions. Next, it is emphasized both interactive learning and student and educator interaction. As the class is more engaging, students will be more involved and participate more. Lecturer interactions allow questions to be answered and issues to be resolved quickly, ensuring an efficient class. Lastly, Zaveri recommends diversifying the exams and testing materials. This would ensure honesty and force students to actually learn the material and be able to show they know it. These are just a few suggestions that this study recommends. Recommendations will vary among studies, but ultimately, they will all work to refine online education.

The following study was completed by Tartavula, titled "Online teaching practices and the effectiveness of the educational process on the wake of the COVID-19 pandemic;" it used the responses from 362 professors and students from 13 European

countries. It stated that “E-learning provides easier access to learning, promotes flexibility so that students can overcome space and time limitations and offers new potential for teaching process to be focused on the learners ’needs and possibilities… ” (Tartavulea et al. 920-936). This compared methods of instruction and formative assessments before, during, and estimated after the pandemic. This study focuses more on what the educators used and how it worked as perceived by students. The educator’s experience was measured by 21 educators with less than ten years of experience, 52 educators with 11-20 years of experience, had 41 educators with greater than 21 years of experience. Student’s ages were recorded as 121 between the ages of 18-21, 110 between 22-25, and 17 older than 26. They answered a similar survey that allowed for a cross-sectional analysis of the responses.

The first section compared the instructional methods of both synchronous and asynchronous and the preference throughout the pandemic. Before the pandemic, the most popular methods were first: uploading materials, second: emailing, and third: sharing documents and forums. These methods were available in a traditional setting as that had been a preference in most cases. During the pandemic, the most popular methods were first: uploading materials, secondly: audio and video conferencing, and thirdly: chats, forums, and emailing. This shows the increase in distance communication as audio and video conferencing become the main form of instructional methods. Uploading documents remains a significant contributor in instructional methods, possibly due to its familiarity and ability to work just as well in a distanced learning environment. Thirdly, quick forms of communication rise as classes still need communication for material delivery, lessons, instruction, and questions in the class. These methods became the norm

to communicate as classes were separated. After the pandemic, the most popular methods were first: uploading materials; second: emailing, sharing documents, pre-recorded videos, and audio and video conferences; third: chats, forums, and virtual whiteboards. The rise in so many popular methods could indicate that more options for students allow more success, and students can find what they need to succeed and do it in a way that best suits them. This could become more common as the realization that students don't all learn the same way and availability could become the key to success.

When it comes to online formative assessments, there could be a bigger unrealized change as in-person tests and exams are taken out of consideration due to their unavailability. Before the pandemic, homework was recorded as the most popular method, with projects close behind and online quizzes following. These options still work very well in person and could have been online to save class time or increase flexibility. During the pandemic, online quizzes, homework, and projects all became tied for the most preferred, with online discussions following. Once again, a familiar assessment became more popular as it was something students knew how to do and had done already before the pandemic. The class could remain as similar as possible with the use of familiar assessments. Online discussions rose in popularity which makes sense as classes are distanced, and participation is needed and encouraged from the students. This could have been the educator checking in with students and seeing how students were fairing in the new environment. After the pandemic, it is estimated that homework and project will remain at the top, with online quizzes close behind, followed by online discussions. This shows the educators' preference and what they think worked or was helpful to their teaching style. The trial of new methods opens the door for educators to discover what

they like and dislike and what they can use to better their class. This can help refine online education as student and educator preference is understood and taken into consideration.

The study's conclusion considers the idea that the future of online education will be impacted and formed. In an instance where change is brought so quickly, honest preference can be seen in an immediate reaction, but changes as users get used to the new methods. The article states that "…the support received, the time invested, the existence and facilities of online platforms and the technological readiness acted as facilitators rather than barriers in the process" (Tartavulea et al. 920-936). They also investigated the outcomes and decided that "The switch to online teaching has an overall moderate positive perceived impact and, the overall effectiveness of the online educational experience is perceived to be lower than in face-to-face teaching" (Tartavulea et al. 920-936). Their outcome shows a clear preference for face-to-face or traditional education rather than online education. This will be compared to other studies are students and educators show their preference in educational modality. It will also be seen if this preference stays consistent in other studies and why or why not.

The third study comes from Tarah H. Fatani, who completes her study at King Abdulaziz University in Saudi Arabia. The study examines responses from 162 undergrad medical students whose responses gauged the quality of web video conferencing. The study acknowledges the challenges the educators faced; "…demonstrating pedagogical skills in an online classroom, addressing their managerial role, establishing relationships with students, and providing technical support" (Fatani 1-8). COVID-19 is responsible for these challenges as classrooms were disrupted and moved online. Web video

conferencing is considered a synchronous method of online education that allows two-way, real-time communication. When it comes to satisfaction, Fatani describes findings as "mixed." "90% of students responded favorably," but "80% stated that they would have been more comfortable in a conventional classroom setting" (Fatani 1-8). Web video conferencing was considered a barrier in interacting with the educator. It slowed communication and responses, which is a consistently reoccurring factor in the success and effectiveness of online education. Fatani continued with a survey that measured factors that affect student satisfaction, such as: "learning, enthusiasm, organization, group interaction, individual rapport, technology and satisfaction" (Fatani 1-8).

In Fatani's study, survey questions were asked that gauged the factors that affect online education. For example, for learning a question such as "I have learned and understood the subject materials of this CBD" (case-based discussion) (Fatani 1-8). The learning portion covers the students' understanding of what was going on in class and learning the material itself. This section averaged a 4.1005 on a scale of 1 (strongly disagree) -5 (strongly agree) regarding understanding and learning. It also encompasses how well the educators covered the material. This grade shows a general agreement in the learning aspect of the case-based discussion. Students were engaged, and the educator did a good job presenting the material. The next section, enthusiasm, encompasses the effort of the educator in seeming excited and using an interesting delivery method. This section averaged 4.125, which shows that students thought the educators were excited to present the material and successful in their efforts to do so. In the organization section, the educators' ideas are judged on clearness, preparation, and facilitated note-taking. This section averaged a 4.12, which once again shows that educators were successful in

organizing their lessons. This exemplifies the educator's ability to adapt and excel in an unfamiliar environment. This benefits the students because educators were successful in delivering the material in any way they could. The group interaction section considered students' participation and encouraged them to ask questions and get involved. This section averaged 4.2, which means students felt encouraged and able to ask questions and participate in class. This is important as interaction was a significant factor in traditional learning that would decrease in other learning methods. This report of students feeling called to interact shows that interaction was still present and allowed class to continue even in a new format. The last section was technology; it considered educators' use of multiple resources and technological problems. This section averaged 3.385, which is the lowest of all sections regarding what the educators did. The use of various resources was 3.95, and the technological problems were 2.82. This highlights that educators may have used more resources than usual; this could be due to the unfamiliarity of new online resources and the opportunity to try. The technological issues inquiry shows that there were issues but an expected number of issues. This will be a consistent factor as the problems can be out of the hands of students and educators. The conclusion was that "Web video-conferencing had an overall positive outcome and student satisfaction, and teaching quality relied on teaching, cognitive and social presence rather than technology" (Fatani 1-8). This helps control the worry and reliance on technology. That educators and students still rely on each other the most and can work around obstacles.

The last article is titled "face-to-face learning vs. blended learning vs. online learning." This study gauges the preferred method of education from 100 students in Indonesia in an Islamic Religious Education study program. This study was very forward

in simply asking the preferred method of education delivery compared to all three methods. It also inferred what learning media was most preferred and ultimately between the three modes was the first choice among the students. In face-to-face vs. blended learning, face-to-face was preferred by 75% of the students. When it came to face-to-face vs. online learning, face-to-face won at a higher margin at 95%. Only 5% of the students preferred online learning, even in cases where exam results were the same. When blended and online education were at odds, the favorite was blended learning with 96%. Once again, when compared to any other type of learning, online learning pulled in under 10% of the votes for preference. While comparing the learning methods, the preferred learning media options were gauged, and WhatsApp came out on top, getting 82% of the votes. This may be a cultural result as WhatsApp is more popular overseas than in the United States. Lastly, when all three online education methods were compared, face-to-face received 82% of the votes, blended learning received 20% of the votes, and online learning only received 2% of the votes. This shows a clear winner in preference on learning environments; face-to-face won by a vast majority. This so far has been the result of most studies; face-to-face is the preferred method, and if it is not an option, whichever method that most resembles face-to-face learning is the next most preferred method.

The conclusions from this article are that face-to-face learning is vastly favorited by students when compared to other methods. Blended and online education have to carter towards four areas: “Combining flexibility, stimulating interactions, facilitating student learning processes and encourage an effective learning climate” (Awal Kurnia Putra Nasution et al.). With the introduction of distance in education, educators and

students have to put forth more effort to recreate the learning environment they are accustomed to. The flexibility aspect allows for a less structured schedule which brings both positives and negatives. Simulating interactions can be hard to ensure through a computer screen. In cases, as seen before, where this is achieved, there is a better experience from students as they are engaged and participate in their education. Facilitating the learning process can be as simple as deciding how to present the material and continue throughout the semester. Online it is harder for educators to watch over every student and keep them involved. Lastly, an effective learning climate gets the job done. This is hard to define as educators teach differently, and students all learn in different ways. As online learning tries new things, it will continue to be refined and as effective as possible.

In all the studies above, students' preference is shown in whatever seems to imitate the traditional learning environment. This indicates that students may not want change, and the same goes for educators. Both parties are accustomed to what they know, and trying new, uncomfortable things in a forced, timed environment is not what they want for their education. These studies call one to expect a potentially poor response from students and educators who participated in the fall 2020 semester in methods they did not prefer. It would be expected that both students and educators will want to return to a predominantly traditional classroom setting once they are allowed. It would be expected that online learning will receive a massive increase in focus after the pandemic. People will want to be prepared for future possibilities and recognize online education's opportunities to capitalize on them. A refined, effective online education would grow in participation and could become a preferred method in years to come. I would expect

online education to grow more than it usually would after the pandemic as some students and educators discover their preference in online education.

Methodology

My research exemplifies students' and teachers' preferences and experiences in the rapid change to online learning during the fall 2020 semester. I first observed the original presiding preference on online learning and the success for students and teachers, as well as their satisfaction with the methods that have been used. More specifically, this is the average number of online classes students regularly took before the beginning of the 2020 semester, how often teachers would teach online, and if they initially preferred online or in-person. This research will help exemplify the popularity of online and even web-assisted classes while they were still a choice (pre-COVID 19). That research will set the expectation for the success of the rapid switch to online learning and show whether the switch to online learning was the best decision education-wise. Then I will compare that data to the success and satisfaction of online classes taken in the fall 2020 semester. I gathered my data from students and teachers concerning the fall 2020 semester. I utilized surveys to help me gauge satisfaction and success in the newer, forced online learning environment. The surveys were distributed to mainly MTSU students and teachers who were a part of the fall 2020 online semester. My surveys utilized yes or no questions, short answer questions, and scales (1-10) to gauge success and satisfaction and a multitude of other points of interest between teachers and students.

The surveys helped me understand students' original preferences and what they experienced with the switch to online learning and how they would say the semester went on a scale of success and satisfaction gauged 1-10 (1= poor success/ no satisfaction, 10= successful/ satisfied). For teachers, the surveys will allow me to understand their

preference pre-COVID 19 and how they expected the semester to go while online. The surveys also exemplified how successful they were with new technology and resources and delivering the lessons. Teachers also had an opportunity to gauge their overall success and satisfaction in the fall 2020 semester with a scale ranging from 1-10 (1= poor success/ no satisfaction, 10= successful/ satisfied). The surveys show both students and educators what they thought worked and what did not work for them. It also showed each group's expectations for the other and if those expectations panned out throughout the semester. I then compared the levels of satisfaction and success from traditional classes (pre-COVID 19) and the new online classrooms post (COVID 19). This comparison showed a preference for traditional learning vs. an online classroom. It showed what students saw as beneficial and potentially bettered their education and what did not work and made school even more challenging. For teachers, it showed how they thought the fall 2020 semester would go and how it went for them and their students. Both cases help point out what resources were tried and if they added benefits to learning or if they became a hindrance.

These showed potential trends in education in the future and what to expect. This allowed me to draw conclusions about the success of this transition and potentially predict future trends of online learning and other changes in the classroom. This could be a breakthrough that expands the walls of learning and can better society. This may also show students need a physical classroom, generally, to succeed. The traditional classroom is what works best so far and explores why students do or don’t learn the best there. The limitation of my research is that it may be challenging to collect data concerning the subjective view on online learning pre-COVID 19. Another limitation is that every

student learns differently. Some students cannot pay attention as well online as they could in person and vice versa; the same goes for teachers teaching ability. My research may only be a peek into the potential of new learning methods and their success.

Survey Results: Students

The survey was sent to students and educators through a Qualtrics link that was distributed via email. I shared it with fellow students by sending it to group chats from current and previous classes I knew were eligible to participate in the survey. I also sent it to past educators I had with the intent that they share it with fellow faculty and make it accessible to their current students. Ultimately, I received 107 responses, with only 95 indicating they participated in the fall 2020 semester; 12 of the responses were from participants who had not participated in the fall 2020 semester. Out of the 95 responses, 85 were student responses, and 10 were educators. I reached my goal of responses from students but only reached about half my responses from educators. I expected more of a challenge receiving responses from educators, but their responses contained more free responses questions that allowed more insight.

For the student responses, I received responses from many different ages, with the average being 22 years old during the fall 2020 semester, the majority being classified as sophomores. The breakdown of classification is seen in Table 1. This allowed a good representation of the entirety of MTSU. Most students being sophomores and juniors, allow the conclusions that they have had an opportunity to schedule their classes and experience the traditional college classroom setting. Regarding major, the majority I received responses from were accounting students (54.12%). I received responses from a total of 27 different majors, with 10% having changed their major after the fall 2020 semester. The spread of majors and ages gave me a good view of MTSU.

Table 1. Student Classifications

	Students		
#	Response	%	Count
1	Freshman	8.14%	7
2	Sophomore	40.70%	35
3	Junior	34.88%	30
4	Senior	9.30%	8
6	Graduate Student	6.98%	6
	Total	100%	86

The student responses were that 24 students (28%) had never taken an online class before, 32 had taken 1- 5 online classes before, and 25 had taken 6-10+. This shows that online education was not as unfamiliar as expected; most have had some online education experience. The average number of online classes taken before was 4.4 classes. The breakdown of course offerings was 61 online classes taken, 68 had some remote classes, 25 had some hybrid classes, and 50 had some in-person classes. This may indicate a preference to some degree or simply what was available. Those with online classes reported various technologies such as "Zoom, Quizlet, Chegg, Panopto, D2L, and Connect" These were the leading technologies that students responded well to. Zoom and Panopto seemed to be the most popular as students emphasized that they liked the ability to participate in lectures from wherever they were and the ability to rewatch lectures. The use of online proctoring systems also increased, and students had a lesser opinion of these

as they seemed to bring challenges. These resources gave students potentially more opportunities to learn.

When it came to the effect of online education on GPA, students reported the following as indicated in table 2.

Table 2. Online Education Effects on GPA

GPA Change			
#	Response	%	Count
1	Increased	20.69%	18
2	Decreased	32.18%	28
3	Not Affected	47.13%	41
	Total	100%	87

This shows that most students did not feel a change in their GPA even in a different learning environment. The lowest percentage was the increase in GPA, so it seems online education did not generally make things any easier on students or benefit them grade-wise. When it came to workload, students responded as follows in Table 3.

These tables have a slight correlation because most students felt an increase in the workload, and GPA did not change or even decrease. It seemed like more work for the students was a challenge or at least a hindrance in their grades.

Table 3. Workload Change

Workload			
#	Response	%	Count
1	More work	45.78%	38
2	Less work	18.07%	15
3	The same amount of work	36.14%	30
	Total	100%	83

When it came to stress levels, students, on average, reported that stress level was a 3.42 out of 5. This shows slightly above-average stress levels, which does correlate with the increase in workload. It may have also been because students reported communication with the educator a 3.52 out of 5. This is still slightly above average and indicates that communication may have needed to be high or ease the stress on students. Of those surveyed, 81% of students felt like they knew what was going on in class.

Students reported benefits of online learning, such as flexibility and no commute. Flexibility or doing schoolwork on their own time seemed to be the most significant benefit as students reported that they enjoyed the option of participating in class whenever and wherever. Students were also more comfortable test-taking and teaching themselves in the comfort of their own homes. They also emphasized that the lectures were recorded and could be rewatched if they missed class or needed to revisit a topic. This allowed students to work individually at their own pace and have control over their education. Some students mentioned the increased responsibility of time management that they needed with the option of online education. Lastly, the ability to not have to

commute to class seemed to have saved everyone time. From working more to studying more, the omittance of driving to campus was a huge plus for the students.

When students responded on a scale of 1-5 on how likely they are to retake an online class, they averaged a 3.55. Satisfaction in the fall 2020 semester averaged 3.37 out of 5 as well. Satisfaction and the desire to retake online classes correlate as a student found success in the online semester. Of students who had never taken an online class before, their satisfaction averaged 3.38 out of 5. Students who had online education experience averaged a 3.32 out of 5. This shows that students who experienced online education for the first time were about as satisfied as students who had experience, indicating that they had a pleasant experience with online education and adjusted well. Retaking online classes for students who had never taken online classes averaged a 3.25 out of 5, while students who had online education experience averaged a 3.67. This can indicate a preference as students who had participated in online education were more likely to do it again.

Lastly, I inquired if students felt like they learned the best they could have this semester online. Many students felt like they did not. They felt the effect of the lack of interactions from educators and the unpreparedness some educators faced. One student responded, “No. I learn better in the classroom, and most of my teachers did not reach out in any form of contact. They were there just to grade papers.” Another student responded, “I did not learn as much because I am a kinesthetic learner. I need interaction, group discussion, and examples. Being online, having asynchronous and lack-luster participation prevented me from learning as well and easily as I have in the past.” This shows the importance of interactions in the classroom and engagement from educators.

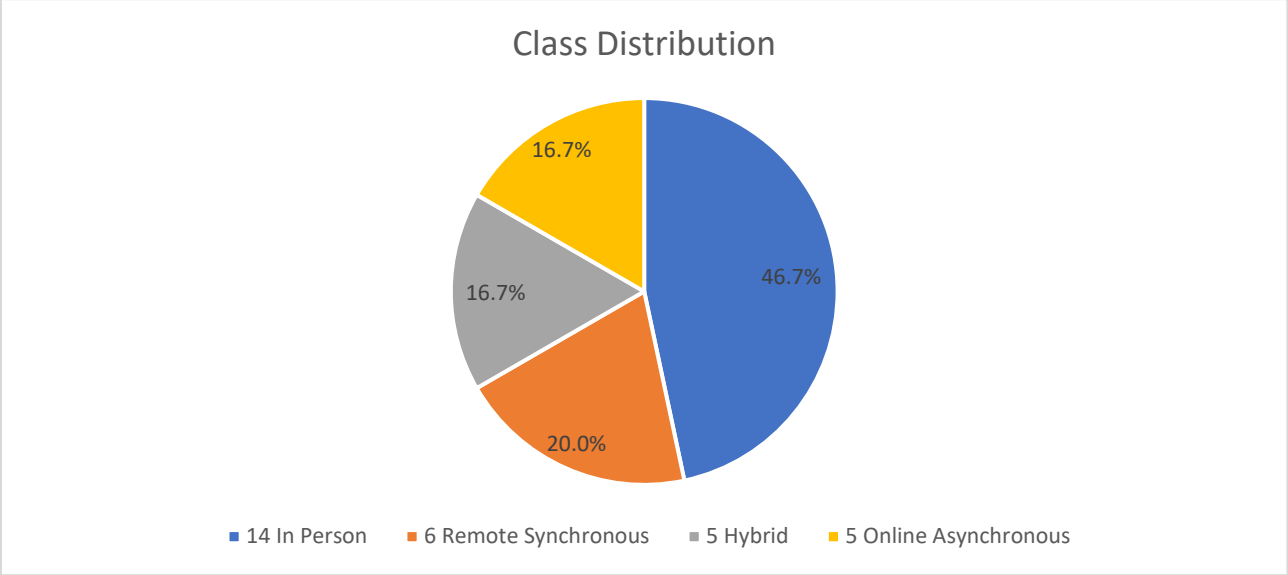
This could be to online challenges or the unpreparedness the fall 2020 semester faced. One student responded, “Yes, my online professors uploaded many video lectures and were always available to help.” This shows some students were able to adapt on their own and find ways to succeed.

Overall, students seemed to do just as well online as they would’ve in person. Students’ responses indicated they were not as happy with the challenges they faced in the online classes, but some benefits made online education advantages. There is a new responsibility on students to depend on themselves more to study and to learn. Students generally responded, though, that they did not learn as well online as they could’ve in person; they seemed to have learned well enough to get by. This response could expose things that online education is missing to be efficient or that traditional classroom settings can impose to create an overall better learning environment.

Survey Results: Educators

The educators' survey got fewer responses, but conclusions can still be drawn to gauge experiences during the fall 2020 semester. The educators taught 30 combined classes during the fall 2020 semester, and the classes were either in-person, remote synchronous, hybrid, or online synchronous. In-person was the most popular at 46.67%. Remote synchronous was the next highest at 20%, and online asynchronous and hybrid were tied for the lowest at 16.7%, as seen in *Table 4*.

Table 4. Class Distribution.



In-person was the highest possibly because educators are the most used to that method of education. Remote synchronous was the next highest, which surprised me because I expected educators to try and remain in the classroom if they were comfortable with it. When it came to experience teaching classes, the average number of years was 25

years. When it came to teaching online classes, 30% had never taught an online class, 10% had taught one, and 60% had taught three or more online classes. This shows the disparity in experience with online education; some were very experienced, and some were not experienced at all.

The next question inquired about what it took educators to prepare for the fall 2020 online semester, whether to change lesson plans or explore new resources. One educator responded that "Lectures, discussion of homework, coverage of homework problems, excel projects, article summaries. I spent about nine hours of lecture time, approximately 20 hours per week preparing for classes, and about 10 hours per week on research during the fall, 2020 semester." Another said that "I recorded my lectures in real-time using Zoom. I also used exam proctoring software to give online exams. I spent approximately 40 hours preparing exams and making sure that my students were prepared for the use of the new technologies and troubleshooting problems." This shows the extreme work behind the scenes that was required for online education to be possible. Educators had to adjust and adapt to new lecturing methods and testing methods. Zoom and exam proctoring services seemed to be the most popular new resources that went into effect during the fall 2020 semester.

When it came to GPA changes, the educators reported as follows in *Table 5.* This correlates with the students' view on their GPA change in the fact that the majority experienced no change or a decrease. Educators also reported that they "always" assigned work, as shown as a 4.7 out of 5. The students also confirmed this when they indicated that the workload seemed to increase. They also rated their communication with students as a 3.2 out of 5. Both parties seemed to rate this barely above average; this could be

because that there were fewer opportunities in a classroom setting to communicate, so it had to be done intentionally through email.

Table 5. Educators' View on GPA Change

	Educators' View on GPA		
#	Response	%	Count
1	Increase	20.00%	2
2	Decrease	40.00%	4
3	No Change	40.00%	4
	Total	100%	10

Educators' satisfaction for the fall 2020 semester was as follows in *Table 6.*

Table 6. Educators' Satisfaction

		Educators' Satisfaction					
#	Field	Minimum	Maximum	Mean	Std Deviation	Variance	Count
1	Material delivery	3	5	4	0.47	0.22	9
2	Student response	3	4	3.5	0.5	0.25	8
3	Semester Overall	2	5	3.5	1	1	8
4	How well students learned the material	2	5	3.38	0.86	0.73	8

This shows that, generally, educators reported above-average satisfaction for the fall 2020 semester and that it went well. They were satisfied with how the material was delivered, which could indicate success with the new resources. The educators were also relatively satisfied with how the students responded and how well the semester went overall. This shows that what they did worked for them and that the students were set up for success. It is concerning that the lowest average was how well educators thought that the students learned the material. This could be due to student effort or the observed material retention, affecting future success in classes for some students.

The educators did report some benefits to online education, although not every educator had a favorable view. One educator reported three benefits: "1. Provides more flexibility to the student as to when things are completed (i.e., they can complete requirements on their own schedule). 2. Can be more convenient for students who do not live close to campus (i.e., reduces commute time) 3. Students can review recorded lectures as often as they like (assuming the professor took the time to create them, which I do)." These were generally the responses from educators as they saw these benefits the most. One educator also responded simply, "None." This indicates some teachers did not appreciate the change and were not very responsive. Students also confirmed some of the same views, specifically with flexibility and the ability to rewatch lectures.

Drawbacks for educators were mainly the lack of interactions between students and educators and students and educators. One educator reported, "The biggest drawback is the lack of individual in-person communication. In a face-to-face class, some of the most important communication is with students who approach me in the few minutes before or after a class meeting. There is nothing comparable in an online class. Few of the

online students ask for video conferences, and few of them take advantage of opportunities to use the discussion forum to post their questions." This emphasized what students are missing out on and what the educators struggle to provide. When it came to student-to-student interactions, another educator reported, "Weaker students do not have the opportunity to approach other students for help." This shows the most significant challenge online education faces and a crucial aspect of education that students and educators could miss.

I also asked the question, "Do you feel the students learned as well online as they could've in person?" This question got mixed responses; one educator responded, "Yes, I feel that, given the nature of the content, the course objective, and the program objectives that this course contributes to, students have an opportunity to learn as well online as they do in person. I do not think that is true for every course." This shows the belief that anyone can succeed and get as much out of online classes as they could out of in-person classes. Another educator responded, "No, many students needed more classroom time." This shows the other opinion that students need the in-person experience to do the best that they can. Either way, there is a responsibility on the educators to provide the resources and a responsibility on students to take advantage of what was made available to them. When it comes to teaching online classes again, educators report that 60% said they definitely would teach online classes again, and 20% never said again.

Conclusions

As the students and educators responded to the survey and I compared the results to past research and findings, there were a few similarities that each party had consistently. These similarities indicate what each side deems essential to their success and satisfaction in online education, or it stresses constant challenges and needs to be addressed. These critical factors, if handled correctly, could allow online education to increase in popularity and effectiveness as it could become better overall. This may only be the beginning of what online education could become, as the possibilities are endless as technology continues to adapt.

For the students, the flexibility was a huge advantage; they used this time for many activities. Some students could work more and pay off school, and many had more time to study and learn independently. They were also able to work school into their life in the most comfortable way. The school became more spread out in the day, allowing students to take it in at their own pace and not stay with a group through the lessons. The other huge plus was the availability of resources. Resources like recorded lectures and online sites gave students 24/7 access to lessons and options to study. Students enjoyed these as they could rewatch lectures they missed or needed to look over again for any reason. These were the main benefits students emphasized that they needed or that worked the best for them. This information could influence learning in general as this shows that students can and will use the resources on their own time to succeed.

When it came to drawbacks, the biggest one was the lack of interactions. For some students, the lack of interactions made it harder to pay attention in class. For others, they need the accessibility of the educator to ask questions and provide examples. The

discussions with an in-person class allow everyone to participate and contribute, providing a more significant influence of ideas. These ideas help students learn and stay engaged in class. The factor of responsibility also seemed to influence students' success. Students realized their success relied more upon them and their drive to access resources and succeed. Some felt that the instructor was not present, which shows students' dependence on the educator to guide and teach the class. This once again circles back to interactions and the necessity of interactions for both students and educators.

For educators, the advantages were once again flexibility and accessibility. Flexibility wise the educators reported that they provided more fixability for the students, which allowed the class to flow smoothly. Accessibility wise they indicated that students had access to every resource they made available. This would allow educators to step back, if they choose to, and not have to facilitate the class as close as they may in an in-person setting. They also had the ability to try out new resources that they could incorporate into classes in the future. Overall, the educators' benefits seemed to cater to the students getting the most out of online education, which shows the educators were very understanding.

Educator drawbacks were the planning and timing portion of the rapid online switch. Many educators spent a multitude of hours in preparation, switching in-person classes to online and learning resources that would ensure success. As they were unfamiliar with many resources, learning and incorporating them into class could be a constant battle as technology is only so reliable. Another drawback educators noted was the lack of interactions in class. They said some weaker students are dependent on these interactions to succeed, and all students benefit from them. In an online setting, fewer

students take advantage of opportunities to speak with or communicate with the educator. The students initiate interactions with the educator, and educators have no control over this and cannot tell how they are handling class until it is too late.

When the benefits and drawbacks are compared between students and educators, each side exemplifies what they need to succeed or even excel. In this case, flexibility and availability of resources seem to be the main two benefits. These factors come up time and time again as what each side prioritizes. As noted, education in the future should become more flexible, and resources for class should become more readily available. This would be expected to improve the success and satisfaction of education. On the side of the drawbacks, it is seen how meaningful interactions in class are. This was the main drawback, as both students and educators mentioned this a multitude of times. Interactions help facilitate classes, engage students, and create relationships with students and educators. Interactions are needed, and online education needs to find a way to provide for the students and educators who want it. Once this challenge is met, classes should be more satisfied with the class and successful in class. Once these benefits are capitalized on and the drawbacks are diminished online education and education, in general, will prosper.

Appendix

Fall 2020 Survey

Start of Block: Informed Consent

Q37 Dear Participant,

On behalf of the research team, the Middle Tennessee State University (MTSU) would like to thank you for considering taking part in this research study. You have been contacted by the above-identified researcher(s) to enroll as a participant in this study because you met its eligibility criteria.

This consent document describes the research study for the purpose of helping you to make an informed decision on whether to participate in this study or not. It provides important information related to this study, possible interventions by the researcher(s), and proposed activities by you. This research has been reviewed by MTSU's internal oversight entity - Institutional Review Board (IRB) - for ethical practices in research (visit www.mtsu.edu/irb for more information).

As a participant, you have the following rights:

• You should read and understand the information in this document before agreeing to enroll
• Your participation is absolutely voluntary, and the researchers cannot force you to participate
• If you refuse to participate or to withdraw midway during this study, no penalty or loss of benefits will happen
• The investigator MUST NOT collect identifiable information from you, such as name, SSN, and phone number
• The researcher(s) can only ask you to complete an interview or a survey or similar activities, and you must not be asked to perform physical activities or offer medical/psychological intervention
• Any potential risk or discomforts from this study would be lower than what you would face in your daily life

What is the purpose of this study?

The purpose of this study is to interview both students and educators about their experiences during the fall 2020 semester. This will allow me to understand the success level and satisfaction of each party and compare them understanding the success of online learning.

What will I be asked to do in this study?

Simply fill out a non-intrusive survey

How many times should I participate, or for how long?

It is a survey to be completed once.

What are the risks and benefits if I participate?

There are no risks; the benefit would be the addition of information into my research to help me draw the best conclusions and understand what works best for both students and educators.

What will happen to the information I provide in this study?

It will be put into a numerical format to allow easier comparison between answers. No names will follow any answers.

What will happen if I refuse to participate, and can I withdraw if I change my mind in the

middle?
There is no penalty for not completing the survey, and you can not respond or simply not participate.
Whom can I contact to report issues and share my concerns?
You can contact the researcher(s) by email or telephone (**901)-220-3606 or jef4s@mtmail.mtsu.edu**. You can also contact the MTSU's Office of Research Compliance by email – irb_information@mtsu.edu. Report compliance breaches and adverse events by dialing 615 898 2400 or by emailing compliance@mtsu.edu.

Confidentiality Statement: All efforts, within reason, will be made to keep the personal information in your research record private, but total privacy cannot be promised; for example, your information may be shared with the MTSU IRB. In the event of questions or difficulties of any kind during or following participation, you may contact the Principal Investigator as indicated above. For additional information about giving consent or your rights as a participant in this study, please feel free to contact our Office of Compliance at (615) 898 2400.

By clicking the YES button below, I give my consent to participate in this study. I understand that I can withdraw from the study at any time without facing any consequences.

- ○ YES (1)
- ○ NO (2)

Skip To: End of Survey If Dear Participant, On behalf of the research team, the Middle Tennessee State University (MTSU) wo... = NO

End of Block: Informed Consent

Start of Block: Default Question Block

Q3
This survey concerns university education during the **FALL 2020** semester (approximately one year ago). Before we begin, were you either **taking** OR **teaching** classes during the 2020 Fall Semester?

- ○ Yes (1)
- ○ No (2)

Skip To: QID1 If This survey is concerning university education during the FALL 2020 semester (approximately one y... = Yes

Skip To: End of Survey If This survey is concerning university education during the FALL 2020 semester (approximately one y... = No

Are you an Educator or Student?

- ○ Educator (Professor, Instructor, etc.) (1)
- ○ Student (2)

End of Block: Default Question Block

Start of Block: Educator Questions

Online teaching This survey, unless noted otherwise, pertains to the **FALL 2020 semester**. What classes did you teach during the Fall 2020 semester? (e.g., ECON 1010).

Also, please signify if the class was delivered: **in-person (IP):** class met in a classroom 100%
online asynchronous (OA): class never met at the same time, even online **remote/online**

synchronous (RS): class met online at the same time **hybrid (H):** some mixture of the above methods

	Class Prefix and number (e.g., ECON 1010) (1)	Number of Sections (2)	Delivery Method (e.g., IP, OA, RS or H) (4)
Class 1 (4)			
Class 2 (5)			
Class 3 (6)			
Class 4 (7)			
Class 5 (10)			

Q21 How many total years of experience do you have as a professor, instructor, lecturer, etc.

_____

Q20 In the last two years (prior to 2020), how many total online classes had you taught (if none, please put 0)

_____

Q22 How did you prepare to teach in the Fall 2020 semester? Please estimate the time required and share any resources, methods used to prepare.

_____

	How often was it used?					How familiar were you with it?					Student Response				
	1 Never (1)	2 (2)	3 Sometimes (3)	4 (4)	5 Always (5)	1 Not at all familiar (1)	2 (2)	3 Moderately Familiar (3)	4 (4)	5 Extremely Familiar (5)	1 Negative (1)	2 (2)	3 Neutral (3)	4 (4)	5 Positive (5)
Zoom (4)	○		○		○	○		○		○	○		○		○
Proctorio/Examity/Proctoring Software (12)	○		○		○	○		○		○	○		○		○
Microsoft Teams (13)	○		○		○	○		○		○	○		○		○
Skype (14)	○		○		○	○		○		○	○		○		○
Other resource/Technology (15)	○		○		○	○		○		○	○		○		○
Other resource/Technology (16)	○		○		○	○		○		○	○		○		○
Other resource/Technology (17)	○		○		○	○		○		○	○		○		○
Other resource/Technology (18)	○		○		○	○		○		○	○		○		○
Other resource/Technology (19)	○		○		○	○		○		○	○		○		○

Q38 What new resources/technologies did you use to deliver the material? How familiar were you with the technology/resource? What resources worked best (What did students respond best to? What resources did students not respond well to)? Please answer for the items provided, and

list any additional technologies in the blanks provided, and answer the questions about them as well.

Q25 Did you see a change in students' grades (from your normal grade distribution)?

- ○ Increase (1)
- ○ Decrease (2)
- ○ No Change (3)

Q26 How frequently did you assign work to your classes on a scale of 1-5?
(1 being Never, 5 being Always)

Workload Assigned (1)	☆	☆	☆	☆	☆

Q27 How did you expect the semester to go on a scale of 1-5?
(1 being difficult, and 5 being a great semester.)

Expectations (1)	☆	☆	☆	☆	☆

Q28 Overall, how often did you hear from students on a scale of 1-5?
(1 being never heard from them, 5 being constant communication)

Communication (1)	☆	☆	☆	☆	☆

Q29 What do you feel are the benefits of online teaching?

_____

Q30 What do you feel are the drawbacks to online teaching?

_____

Q31 How likely are you to teach online classes again on a scale of 1-5? (1 being Unwilling, 5 being Definitely will)

Likelihood of teaching online (1)	☆	☆	☆	☆	☆

Q32 Would you say the Fall 2020 semester was successful in regard to the students learning the material? Why or why not?

Q33 How satisfied were you with the material delivery and how the students responded to the material, and how well they responded to the material on a scale of 1-5? Also, how did the

semester go overall and a scale of 1-5?
(1 being an unsatisfied and poor response, 5 being very satisfied and students responded well)

Material delivery (1)	☆	☆	☆	☆	☆
Student response (2)	☆	☆	☆	☆	☆
Semester Overall (4)	☆	☆	☆	☆	☆
How well students learned the material (5)	☆	☆	☆	☆	☆

Q34 Do you feel the students learned as well online as they could have in person? Why or why not?

End of Block: Educator Questions

Start of Block: Student Questions

Display This Question:

If Are you an Educator or Student? = Student

Q4
This survey, unless noted otherwise, pertains to the FALL 2020 semester, approximately one year

ago.
What was your major and age? If you have switched majors since then, please specify.

- ○ Age (in Fall 2020) (4) _____
- ○ Major (in Fall 2020) (5) _____
- ○ Major change (new major) (6)_____

Q6 What was your classification in Fall 2020?

- ○ Freshman (1)
- ○ Sophomore (2)
- ○ Junior (3)
- ○ Senior (4)
- ○ Graduate Student (6)

Q7 In the last 2 years (prior to 2020), how many total online classes have you taken? (if none, please put 0)

_____

Q35 How were your classes delivered during the fall 2020 semester? Please use the slider below to show how many of each type, of course; you took in the FALL 2020 semester.

For example:
In-person: class met in a classroom 100%
Online Asynchronous: class never met at the same time, even online
Remote/Online Synchronous: class met online at the same time
Hybrid: some mixture of the above methods

Not Applicable

0 1 2 3 4 5 6

In-person ()	
Online Asynchronous ()	
Remote/ Online Synchronous ()	
Hybrid ()	

Q36 What resources/technologies were used most by Educators to deliver the material? How familiar were you with the technology/resource? Please answer for the items provided, and list any additional technologies in the blanks provided, and answer the questions about them as well.

	How often was it used?					How familiar were you with it?				
	1 Never (1)	2 (2)	3 Sometimes (3)	4 (4)	5 Always (5)	1 Not at all familiar (1)	2 (2)	3 Moderately Familiar (3)	4 (4)	5 Extremely Familiar (5)

Zoom (4)	○	○	○	○	○	○
Proctorio/Examity/Proctoring Software (12)	○	○	○	○	○	○
Microsoft Teams (13)	○	○	○	○	○	○
Skype (14)	○	○	○	○	○	○
Other resource/Technology (15)	○	○	○	○	○	○
Other resource/Technology (16)	○	○	○	○	○	○
Other resource/Technology (17)	○	○	○	○	○	○
Other resource/Technology (18)	○	○	○	○	○	○
Other resource/Technology (19)	○	○	○	○	○	○

Q10 What resources used in the previous question were useful or beneficial to your learning experience? How did these help?

Q11 Did online learning impact your GPA?

- ○ Increased (1)
- ○ Decreased (2)
- ○ Not Affected (3)

Page Break

Q12 Did the workload feel like more, less, or the same?

- ○ More work (1)
- ○ Less work (2)
- ○ The same amount of work (3)

Q13 How stressful was the Fall 2020 semester on a scale of 1-5?
(1 being very easy, 5 being unbearably stressful.)

Stress Level (1) ☆ ☆ ☆ ☆ ☆

Q14 How easy was it communicating with the Educator on a scale of 1-5?
(1 being never heard from them, 5 being very easy.)

Communication (1) ☆ ☆ ☆ ☆ ☆

Q15 Did you feel well informed of what was going on in class? (News, due dates, etc.)

- ○ Yes (20)
- ○ No (21)

Q16 Were there benefits to online classrooms? If so, what?

_____

Q17 How likely are you to take online classes in the future? (1 being never again, 5 being whenever I get the chance.)

Likelihood (1) ☆ ☆ ☆ ☆ ☆

Q18 Were you satisfied with how the learning material was delivered in the Fall 2020 semester on a scale of 1-5?
(1 being not at all, 5 being very much so)

Satisfaction (23) ☆ ☆ ☆ ☆ ☆

Q19 Do you feel you learned as much online as you would have in person? Why or why not?

_____

End of Block: Student Questions

IRB Approval

HUMAN PARTICIPANT RESEARCH

IRBF004IC INFORMED CONSENT - EXEMPT

INFORMED CONSENT – RESEARCHERS' DISCLOSURES

USE THIS THIS TEXT as the FIRST PAGE of the QUALTRICS SURVEY

Dear Participant,

On behalf of the research team, the Middle Tennessee State University (MTSU) would like to thank you for considering to take part in this research study. You have been contacted by the above-identified researcher(s) to enroll as a participant in this study because you met its eligibility criteria.

This consent document describes the research study for the purpose of helping you to make an informed decision on whether to participate in this study or not. It provides important information related to this study, possible interventions by the researcher(s) and proposed activities by you. This research has been reviewed by MTSU's internal oversight entity - Institutional Review Board (IRB) - for ethical practices in research (visit www.mtsu.edu/irb for more information).

As a participant, you have the following rights:

- You should read and understand the information in this document before agreeing to enroll
- Your participation is absolutely voluntary, and the researchers cannot force you to participate
- If you refuse to participate or withdraw midway during this study, no penalty or loss of benefits will happen
- The investigator MUST NOT collect identifiable information from you, such as name, SSN, and phone number
- The researcher(s) can only ask you to complete an interview or a survey or similar activities, and you must not be asked to perform physical activities or offer medical/psychological intervention
- Any potential risk or discomforts from this study would be lower than what you would face in your daily life

After you read the following disclosures, you can agree to participate in this study by completing "Part B" of this informed consent document. You do not have to do anything further if you decide not to participate.

1. What is the purpose of this study?

The purpose of this study is to interview both students and educators about their experiences during the fall 2020 semester. This will allow me to understand the success level and satisfaction of each party and compare them understanding the success of online learning.

IRB Details:

- Study Title: *Zooming In Online Learning in the Face of a Pandemic*
- *Principal Investigator: Jacob Ford; Faculty Advisor: Dr. Audrey Scarlata*
- *IRB ID: 22-1025 1q Approval: 08/31/2021; Expiration: 08/31/2022*

2. What will I be asked to do in this study?

Simply fill out a non-intrusive survey

3. How many times should I participate, or for how long?

It is a survey to be completed once.

4. What are the risks and benefits if I participate?

There are no risks; the benefit would be the addition of information into my research to help me draw the best conclusions and understand what works best for both students and educators.

5. What will happen to the information I provide in this study?

It will be put into a numerical format to allow easier comparison between answers. No names will follow any answers.

6. What will happen if I refuse to participate, and can I withdraw if I change my mind in the middle?

There is no penalty for not completing the survey, and you can not respond or simply not participate.

7. Whom can I contact to report issues and share my concerns?

You can contact the researcher(s) by email or telephone (**901)-220-3606 or jef4s@mtmail.mtsu.edu**). You can also contact the MTSU's Office of Research Compliance by

email – irb_information@mtsu.edu. Report compliance breaches and adverse events by dialing 615 898 2400 or by emailing compliance@mtsu.edu.

Confidentiality Statement: All efforts, within reason, will be made to keep the personal information in your research record private, but total privacy cannot be promised; for example, your information may be shared with the MTSU IRB. In the event of questions or difficulties of any kind during or following participation, you may contact the Principal Investigator as indicated above. For additional information about giving consent or your rights as a participant in this study, please feel free to contact our Office of Compliance at (615) 898 2400.

Compensation: There is no compensation

You do not have to do anything if you decide not to participate in this study. But if you wish to enroll as a participant, then please complete the following section.

	NO	YES
➢ I have read investigator(s)' disclosure (Part A) for the above-identified research	☐	☐
➢ The researcher(s) explained the procedures to be conducted verbally	☐	☐
➢ I understand each part of the interventions, and all my questions are answered	☐	☐
➢ The researcher(s) gave me a signed copy of the disclosure page (Part A)	☐	☐

By clicking the YES button below, I give my consent to participate in this study. I understand that I can withdraw from the study at any time without facing any consequences.

☐NO ☐Yes

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