

**Navigating the New Normal: Teaching in the Time of Covid**  
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**Abstract.** The importance of staying relevant when teaching communication and advertising courses is hardly a new concept nor is the use of modern and evolving technologies to achieve this goal. However, empirically assessing college students' perceptions of online learning when it is a forced choice is an underexplored area. To address this gap and consider the perspectives of diverse student populations, this paper analyzes data collected from a large communication class at a Hispanic serving institution. The purpose of this research is to better understand students' perceptions of teaching technologies, class sizes, benefits and hindrances of online learning, preferred course delivery methods, social adaptations, and perceptions of how their university has handled the transition. Data revealed face-to-face courses were the most desired modality with no race or first-generation (FG) differences; however, gender differences were present. Class size impacted modality preference as well as preference for the inclusion of specific online tools. Additionally, a longitudinal comparison of student data between 2018 and 2020, before and after the onset of the global pandemic, revealed significant differences in student preparedness, faculty interaction, and institutional communication.

**Keywords:** pedagogy, Covid-19, survey, diversity, online learning

The Covid-19 pandemic originated in December 2019 in China but quickly spread to countries in all corners of the world and became a global pandemic that continues to impact all areas of life, including higher education. As the pandemic escalated, prompting a national and international lockdown, students experienced a cataclysmic shift in the Fall of 2020 across higher education institutions which offered primarily online delivery methods.

Previously, scholars have viewed online learning as a more modern form of distance learning with minimal live interaction between faculty and students (Benson, 2002; Conrad, 2002). More recently scholars believe there is a relationship between distance education and online learning, but that they are not necessarily one in the same (Moore et al., 2011). The improvements to digital media and content delivery over the last decade have drastically changed how online learning is conducted and discussed. These online environments can include a variety of educational practices, but are often characterized by student-centered, active learning techniques including simulations, games, and new media on mobile platforms (Keengwe & Kidd, 2010). Research examining online learning has reported improved learning based on test scores, student engagement, enhanced understanding, and a stronger sense of community (Nguyen, 2015). Additional benefits of online learning

include convenience (Fedynich, 2013), participation (Morrison et al., 2019), and cost-effectiveness for universities (Steen, 2008).

While online learning provides numerous benefits, it is not without consequences and limitations. One disadvantage is that many students view online courses as individualized learning contributing to a sense of isolation from professors, classmates, and course material (Boling, et al., 2012). Others have noted how online learning hinders conversations with others and creates an impersonal atmosphere (Kear, 2010; Vonderwell, 2003). While the examination of online learning is extensive, an area that needs examination is how the pandemic mid-semester forced transition from face-to-face to online course delivery impacted students.

To address this gap and consider the perspectives of diverse student populations, this paper analyzes data collected from a large Hispanic-serving southwestern university during a global pandemic to better understand students' preferred course delivery methods, perceptions of teaching technology, class sizes, benefits and hindrances of online learning, social adaptations, and opinions of how their university handled the transition.

### **Modalities**

For over two decades a widely accepted practice across several universities has included online content delivery (Manathunga, 2002; Wernet et al., 2000) and the use of internet-based course content to replace classroom instruction (Ahern & El-Hindi, 2002; Brower, 2003; Ponzurick et al., 2000) to meet the shifting demands of their student population. In fact, 77% of accredited institutions of higher education have turned to distance learning programs to deliver course work to students separated by time and physical space (Parker et al., 2011). The modality of course delivery can be divided into five broad categories (Finkelstein, 2006):

1. Face-to-Face (F2F) which is a traditional format where students and faculty are both physically present in the classroom at the same time for content delivery.
2. Hybrid where part of the class is delivered in person and part is delivered online.
3. Synchronous online which allows for live interaction between the instructor and the students (e.g., audio conferencing, videoconferencing, web chats etc.).
4. Asynchronous online which involves significant delays in time between instruction and its receipt (e.g., email, prerecorded videos, discussion forums etc.).

5. HyFlex which integrates online and face-to-face instruction to create learning environments where students can attend in-person or from a distance simultaneously (Angelone et al., 2020).

As institutions were adapting to the evolving longevity of the Covid-19 pandemic, they were forced to determine which modalities made the most sense given their resources and what was best for students. While it was clear that F2F was not a viable option, they had to assess which of the other options students would prefer.

Previous research has compared online and F2F course delivery; however, Arias et al. (2018) notes the lack of random selection and modality preferences as limitations of accurate comparisons in delivery modality. If students are able to self-select modes of pedagogical delivery, the validity of comparative studies are limited although student self-selection of modality may not always be to their own advantage academically, socially, or financially.

Coates and Humphries (2001) found younger students who actively select online courses may be at a disadvantage compared to more mature students. Alpert et al.'s study (2015), an exception to the lack of random sampling comparing F2F, hybrid, and online, found that online students underperform relative to hybrid and F2F, and more specifically, disadvantaged students in the hybrid and online sections did worse than those in the F2F section. Beyond performance, students have expressed concerns with online course delivery due to lack of motivation, challenges understanding the material, and decreased communication with the professor (Alawamleh et al., 2020). In contrast, students appreciate the ease of participation facilitated by mixed learning environments from blogs to learning management systems to online polls (Morrison et al., 2019).

### **Teaching Technologies**

While the importance of knowledge acquisition and learning has not changed, the tools being utilized have evolved. A 2002 Pew Internet and American Life Project report found that college students were early adopters of the Internet, which enhanced their education (Jones, 2002). Educational practices of discussion, training, storytelling, and using video for assignments and research have been around for decades (Altun, 2017), but how these practices are delivered and shared has evolved with online technological advances. While several tools can be used across modalities, academicians are divided on how and if online course material should be delivered differently than F2F. Some advocate creating online courses that emulate traditional F2F classroom experiences while others argue that equivalency is impossible because the medium shifts the dynamics of teaching and learning within virtual classrooms (Donovan et al., 2011).

Henderson et al. (2018) explored the effectiveness of 14 teaching tools in F2F versus online courses for MBA students. The authors found that F2F classes rated guest speakers and team presentations as more effective while online classes viewed tutorials, textbooks, and online activities as more effective for academic success. The two most important factors that demonstrated a significant impact on

the delivery of online content included the technology used and the design of the course (Kampov-Polevoi, 2010). Assessing the forced shift to online classes during the Covid-19 pandemic, Major (2020) revealed that Zoom has a positive impact on online learning experiences due to the direct communication among students and lecturers, which resembles F2F teaching. In an online course, discussion is an important component that can impact effectiveness (Maddix, 2012) and can take many forms from in-class chats and polls to asynchronous discussion boards through learning management systems. As the proliferation of online teaching tools continues, students' perceptions of the benefits of current tools should be assessed.

### **Diverse Student Populations and Varied Educational Experiences**

It is important to note that the student experience is not universal and cannot be treated as such. In fact, the population of students enrolled in colleges and universities nationwide has shifted notably within the past decade. The rise in Hispanic student enrollment in higher education reflects overall demographic shifts within the U.S. population, and a record number of Hispanic students (3.8 million) enrolled in colleges in 2019, increasing 287% since 2000 (Mora, 2022). Highlighting the importance of researching perceptions at a Hispanic serving institution because the number of such universities is likely to increase in the future.

Additionally, by the 2015–2016 academic year, first-generation (FG) students, defined as those whose parents had not obtained an education beyond high school (Tate et al., 2015), accounted for more than half (56%) of all undergraduate students nationally (RTI International, 2019). Educators should recognize that FG students report feeling less prepared for college-level courses and are in greater need of remedial coursework (Reid & Moore, 2008). Furthermore, beyond being the first among their families to attend college, FG students are also more likely to be part of racial and ethnic minority groups (Bui, 2002) and tend to have been raised in lower income households than their peer counterparts (Gibbons & Woodside, 2014). These two additional factors should be considered within the context of higher education and facilitating teaching and learning experiences for FG students.

Previous research examining the impact of gender on performance and satisfaction in online learning environments is sparse and conflicting (Dousay & Trujillo, 2019). Bolliger and Supanakorn (2011) found that females prefer multimodal learning (consistent with online learning) more than males while Wehrwein et al. (2007) found exactly the opposite. Luik (2011) notes how it was previously thought that females and males think, feel, and behave differently with technology because of different technology use preferences, habits, and computer literacy characteristics based on gender. Technology use for males often involves leisure activities while females use technology to complete specific tasks (Dousay & Trujillo, 2019). This may indicate that female learners are more at ease using technology specifically for learning purposes (Luik, 2011; Nistor, 2013) as opposed to technology use for a hobby or entertainment activity, a frequent occurrence for males.

### **Online Class Size**

Prior to the pandemic, educators wrestled with how to best deliver quality educational experiences to their students while adapting to changing pressures both internal and external to the university. One such pressure comes from university administrators who are concerned with fiscal responsibility (as well as student learning) and view increased class sizes and alternative modalities as a way to save schools and programs money (Mitchell & Leachman, 2015; Tomei, 2006). This poses a challenge for faculty, as research suggests large class sizes lead to higher dropout rates, lower retention and attendance, increased cheating, reduced breadth and depth of subject matter, less instructor–student interaction, less instructor feedback, increased reliance on the lecture, and less student involvement (Russell & Curtis, 2013; Saiz, 2014). Class size and its impact on online course delivery has been studied with mixed results (Russell & Curtis, 2013). Bettinger et al. (2017) found negligible impact of class size on grades and retention while Cavanaugh (2005) found the addition of even a single student increased instruction time dramatically. Based on existing research, there is room for additional inquiry related to student perceptions of online class sizes and effective teaching tools.

### **Institutional Response**

The Covid-19 crisis influenced students and higher education institutions across the U.S. in early 2020 with an abrupt nationwide transition to online learning. The disruption of society due to Covid-19 continued as universities struggled to satisfy the conflicting wants and needs of their varied communities (Kennedy, 2020), attempting to balance concerns about reopening so that businesses can begin to recover or to keep classrooms empty to mitigate bringing large groups of students together in confined spaces. Given the unprecedented health and safety concern, universities scrambled to create safe and healthy learning environments through masks, gallons of soap and disinfectants, minimized classroom capacities, and social distancing educational campaigns. The constant evolution of information about the virus forced best practices to adapt quickly and university plans to change frequently. Academic institutions had to make difficult decisions not only regarding educational delivery but also in how they responded to the larger social, cultural, and financial implications of the pandemic. Based on the previous research, the following research questions are proposed:

RQ1: What are students' general perceptions of course modality and online teaching tools in pandemic contexts?

RQ2: Are there any (a) gender, (b) racial, or (c) FG differences in modality preference in pandemic contexts?

RQ3: Does the preference of (a) modality or (b) online tools differ based on class size in pandemic contexts?

RQ4: How do students perceive (a) university allocation of resources, (b) level of preparedness, (c) level of interactions, and (d) the university's response to Covid-19?

RQ5: How have students' perceptions of (a) university allocation of resources, (b) level of preparedness, and (c) level of interactions changed over time?

## Methods

To address the above-mentioned research questions, an electronic survey was administered during the Fall 2020 semester to students at a Hispanic Serving Institution. After receiving IRB approval, the survey was administered, resulting in 332 participants recruited from a large introductory advertising course. The questionnaire was designed and administered through Qualtrics, and respondents received in-class participation credit for completing the survey.

The sample consisted of predominantly females (66%) and most students were juniors (40.7%) and seniors (32.2%). The majority of participants were Caucasian (51.2%) followed by Latino (27.1%) and African American (13%). The age of the sample ranged from 18 to 37, with a mean age of 21.55 ( $SD = 2.79$ ). Additionally, 34.3% identified as FG college students. Beyond demographic items, the following measures were used.

**Modality.** The categories of modality of course delivery were adapted from Finkelstein's (2006) prior research (F2F, hybrid, synchronous online, asynchronous online, and HyFlex). Participants were asked a series of questions regarding the five modalities, including if they have ever taken a college course using any of the modalities (yes or no), were they currently taking college courses using any of the five modalities (yes or no), and the format they preferred for course delivery (five-point Likert scale from "like a great deal" to "dislike a great deal"). Additionally, participants were asked which modality they preferred based on class size where they selected only their top preference: large survey class (100+), average (20–40), small seminar (<12), and skills/technology-based class.

**Online Teaching Tools.** Henderson et al.'s (2018) nine online teaching tools were assessed by students using a five-point Likert scale ranging from "extremely effective" to "not effective at all." The tools included pre-recorded lectures, breakout rooms (in-class activities, virtual class sessions, virtual office hours, and online group projects, current events/examples, discussion posts on learning management systems, online polls/chat tool, and online class discussions. Additionally, participants were asked if they viewed each online teaching tool as effective based on class size (large survey class (100+), average (20–40), small seminar (<12), and skills/technology-based class) where they selected all that applied.

**Student Engagement.** Student engagement was assessed based on the National Survey of Student Engagement (NSSE) survey using a five-point Likert scale from

“never” to “always.” Each subcategory used the following question: During the current school year, about how often have you done the following?

1. Student preparedness: (a.) Asked questions or contributed to course discussions in other ways, (b.) Asked another student to help you understand course material, (c.) Explained course material to one or more students, (d.) Prepared for exams by discussing or working through course material with other students, (e.) Worked with other students on course projects or assignments, and f. Given a course presentation.
2. Critical thinking: (a.) Combined ideas from different courses when completing assignments, (b.) Connected your learning to societal problems or issues, (c.) Included diverse perspectives (political, religious, racial/ethnic, gender, etc.) in course discussions or assignments, (d.) Examined the strengths and weaknesses of your own views on a topic or issue, (e.) Tried to better understand someone else's views by imagining how an issue looks from their perspective, (f.) Learned something that changed the way you understand an issue or concept, and (g.) Connected ideas from your courses to your prior experiences and knowledge.
3. Faculty engagement: (a.) Talked about career plans with a faculty member, (b.) Worked with a faculty member on activities other than coursework, (c.) discussed course topics, ideas, or concepts with a faculty member outside of class, (d.) Discussed your academic performance with a faculty member.

***Quality of Interactions.*** The quality of interactions was examined by having students respond to the following statement: “Indicate the quality of your interactions with the following people at your institution since you started college” for the following groups: (a.) Students in your major, (b.) Other students on campus, (c.) academic advisors, (d.) Faculty in your major, (e.) Other faculty on campus, (f.) Student services staff, and g. Other administrative staff and offices (using a five-point Likert scale ranging from “horrible” to “excellent »).

***Institutional Focus.*** Participants provided their perceptions of how well the institution focused on different initiatives on a five-point Likert scale ranging from “not well at all” to “extremely well.” The specific items assessed were as follows: (a.) spending significant amounts of time studying and on academic work, (b.) providing support to help students succeed academically, (c.) using learning support services, (d.) encouraging contact among students from different backgrounds, (e.) providing opportunities to be involved socially, (f.) providing support for your overall well-being (recreation, health care, counseling, etc.), (g.) helping manage your non-academic responsibilities (work, family, etc.), (h.) attending campus activities and events, and (i.) attending events that address important social, economic, or political issues.

Additionally, participants were asked specifically how the institution was handling the pandemic based on a five-point Likert scale ranging from “not well at all” to

“extremely well” for the following items: (a.) providing access to technology to those in need, (b.) providing technical support to help students succeed, (c.) appropriately accommodating students during the pandemic, (d.) providing timely and relevant communication with the campus community overall, (e.) providing timely and relevant communication with the campus community about the university’s response during the pandemic, and (f.) providing financial support for tuition and housing.

### **Discussion of Findings**

The purpose of this study was to evaluate students’ preferences and perceptions related to the forced shift to online learning during the global Covid-19 pandemic. The first research question examined participants’ general perceptions of the modality of classes. Analysis revealed Face-to-Face (F2F) was the most preferred ( $M = 3.89$ ,  $SD = 1.24$ ) followed by synchronous online ( $M = 3.71$ ,  $SD = 1.20$ ), asynchronous online ( $M = 3.71$ ,  $SD = 1.20$ ), hybrid ( $M = 3.30$ ,  $SD = 1.30$ ), with HyFlex ( $M = 3.29$ ,  $SD = 1.22$ ) being the least preferred modality. In fact, 52.6% liked F2F a great deal while only 17.2% had the same sentiment about HyFlex. Based on the data, F2F courses were the most preferred class modality across the student sample, indicating that students will likely want to return to traditional classroom learning environments once it is safe to do so. When F2F courses are not an option, students prefer to meet with their classes in synchronous online course sessions, probably due to the real time communication, instantaneous responses, and connections with their academic community. If the trend to provide more online and hybrid courses continue, concerns about lack of motivation, challenges understanding the material, and decreased communication with the professor (Alawamleh et al., 2020) will need to be addressed.

Beyond modality, faculty must determine the number and type of online tools to use in their classes. The second part of research question one evaluated students’ perceptions of the effectiveness of online teaching tools during the pandemic. Data showed that students viewed online polls/chat tools to be the most effective ( $M = 3.87$ ,  $SD = 1.03$ ) followed by virtual class sessions ( $M = 3.70$ ,  $SD = 1.03$ ), online class discussion ( $M = 3.68$ ,  $SD = 1.08$ ), virtual office hours ( $M = 3.66$ ,  $SD = 1.10$ ), discussion posts on LMS ( $M = 3.42$ ,  $SD = 1.21$ ), current events/examples ( $M = 3.38$ ,  $SD = 1.13$ ), breakout rooms ( $M = 2.86$ ,  $SD = 1.25$ ), and online semester long projects ( $M = 2.41$ ,  $SD = 1.28$ ). The tools viewed most effective supports Maddix’s (2012) argument that in online classes the most important determinant of success is discussion and interaction not only between faculty and students, but between students as well. While there is not a “one size fits all” approach to online tools, at least one tool should help facilitate discussions in real time and allow for interpersonal interactions between students and faculty to take into account students’ perceptions of these pedagogical tools.

The second research question examined if there were any differences in modality preferences between gender, race, and FG students. Results showed differences in gender but not race or FG students. Such findings indicate that understanding the demographic breakdowns at universities and within individual majors and programs



may prove to be a useful tool for educators looking to best match student enrollment preferences with demographic characteristics.

Using independent sample t-tests, analysis revealed significant differences between males and females for F2F and synchronous online, with no significant differences for asynchronous online ( $t(325) = 1.87, p = .06$ ), hybrid ( $t(324) = .08, p = .94$ ), or HyFlex ( $t(324) = .46, p = .64$ ). Males ( $M = 4.10, SD = 1.08$ ) preferred F2F significantly more than females ( $M = 3.77, SD = 1.30$ )  $t(248.62) = 2.46, p = .02$ ; however, females preferred synchronous online ( $M = 3.81, SD = 1.2$ ) significantly more than males ( $M = 3.51, SD = 1.19$ ),  $t(325) = 2.16, p = .03$ . In contrast, one-way between subjects ANOVAs were conducted for each modality revealing no differences in modality preference based on race or FG status. Results for race and modality preferences include the following: F2F [ $F(6, 324) = 1.32, p = 0.25$ ], synchronous [ $F(6, 325) = 1.59, p = 0.15$ ], asynchronous [ $F(6, 325) = 1.85, p = 0.48$ ], hybrid [ $F(6, 324) = .22, p = 0.97$ ], and HyFlex [ $F(6, 324) = .16, p = 0.99$ ]. Similarly, the results for FG students are as follows: F2F [ $F(1, 329) = 1.39, p = 0.24$ ], synchronous [ $F(1, 330) = .09, p = 0.77$ ], asynchronous [ $F(1, 330) = .05, p = 0.82$ ], hybrid [ $F(1, 329) = .52, p = 0.47$ ], and HyFlex [ $F(1, 329) = .22, p = 0.64$ ].

The next research question (RQ3) examined the impact of class size on modality and online tool preferences. Students overwhelmingly preferred F2F for traditional/average size (41%), seminar (47.9%), and skills/technology based (57.5%) classes while for large survey classes there wasn't a clear preference with only 28% selecting synchronous online and 25% choosing F2F. It should be noted that this survey was conducted during the first fully remote semester during the pandemic. As such, the desire to go back to normal may have influenced the preference for F2F courses.

Class size impacted students' perceptions of online tool effectiveness. For large classes, most students found pre-recorded lectures (70.2%) and online polls/chats (64.8%) effective. In contrast, for traditional/average sized classes, discussion posts on LMS (59.9%) and online class discussions (60.2) were the most effective. For seminar and skills-based classes, virtual office hours were selected the most with 48.2% and 35.5%, respectively. Table 1 provides a complete breakdown of online tool preferences based on class size. These findings shift the focus from the outcomes regarding retention and attendance to what tools might help improve these outcomes. As faculty and administrators are grappling with pressure to increase class sizes, shifts in the online teaching tools used in larger classes with emphasis on prerecorded lectures and polls/chats are needed.

The fourth research question assessed students' perceptions of the university's focus and allocation of resources, students' level of preparedness and critical thinking, and students' level of interaction (see Table 2 for detailed results). Overall, students felt that the university was strongest in providing learning support services and providing support to help students succeed academically. This is not surprising as most institutions had these services and opportunities prior to the pandemic. The areas where students felt there was a need for improvement were

with helping to manage non-academic responsibilities and encouraging the attendance at campus activities and events. This reflects an opportunity for universities to provide a more holistic level of student support that goes beyond focusing solely on academics.

**Table 1**

*Online Tool Preferences Based on Class Size*

| Tool                    | Large          | Traditional    | Seminar        | Skills         |
|-------------------------|----------------|----------------|----------------|----------------|
| Pre-recorded lectures   | 233<br>(70.2%) | 151<br>(45.5%) | 100<br>(30.1%) | 111<br>(33.4%) |
| Breakout rooms          | 79<br>(23.8%)  | 164<br>(49.4%) | 154<br>(46.4%) | 71<br>(21.4%)  |
| Virtual class sessions  | 179<br>(53.9%) | 192<br>(57.8%) | 126<br>(38%)   | 84<br>(25.3%)  |
| Virtual office hours    | 181<br>(54.5%) | 184<br>(55.4%) | 160<br>(48.2%) | 118<br>(35.5%) |
| Online group projects   | 72<br>(21.7%)  | 138<br>(41.6%) | 144<br>(43.4%) | 75<br>(22.6%)  |
| Current events/examples | 152<br>(45.8%) | 181<br>(54.5%) | 140<br>(42.2%) | 88<br>(26.5%)  |
| Discussion posts on LMS | 149<br>(44.9%) | 199<br>(59.9%) | 132<br>(39.8%) | 91<br>(27.4%)  |
| Online polls/chat       | 215<br>(64.8%) | 189<br>(56.9%) | 127<br>(38.3%) | 91<br>(27.4%)  |
| Online discussion       | 149<br>(44.9%) | 200<br>(60.2%) | 154<br>(46.4%) | 96<br>(28.9%)  |

*Note.* Values represent the number of participants that viewed the tool as effective for each class size. Participants could select multiple tools for each class size, so percentages do not equal 100.

Regarding student preparedness and critical thinking, the most common activity students engaged in was asking questions or contributing to course discussions while the least common was attending an art exhibit, play, or other arts performances. Students overwhelmingly thought they were excelling in critical-thinking areas with the lowest ratings related to including diverse perspectives in course discussions or assignments ( $M = 3.38$ ) and the highest being connecting ideas from your courses to your prior experiences and knowledge ( $M = 3.65$ ).

The third part of research question four examined the frequency and quality of interactions students had with other members of the university community. Data revealed limited interaction with faculty about academic performance, career plans, course topics outside of class or working with faculty on activities other than coursework. While interaction with faculty may not be frequent, the quality of interaction with faculty in their major was rated highest followed interactions with academic advisors, students in their major, other students on campus, other faculty and college staff, and administrative staff and offices. The pandemic limited the amount and type of interaction students had with university faculty and staff, but the quality of the interaction was still viewed as favorable. This finding provides evidence that even if faculty and staff are not interacting with students in person, the quality of the interaction and exchange has a positive influence on student perceptions.

Next, students' perceptions of how well the university focused on different aspects of student life during the pandemic was evaluated. Data shows several areas for improvement with students' perceptions all falling below average. The highest praise was for providing timely and relevant communication with the campus community ( $M = 3.15$ ,  $SD = 1.11$ ) and providing technical support to help students succeed ( $M = 3.14$ ,  $SD = 1.12$ ) followed by providing timely and relevant communication with the campus community about the university's response ( $M = 3.11$ ,  $SD = 1.16$ ), providing access to technology to those in need ( $M = 3.07$ ,  $SD = 1.13$ ), appropriately accommodating students during the pandemic ( $M = 2.98$ ,  $SD = 1.21$ ), and, finally, providing financial support for tuition and housing ( $M = 2.80$ ,  $SD = 1.27$ ). Results demonstrate the need for universities to have a clear communication plan about each of the different initiatives they are using so that students are informed and feel as though the institution is taking a proactive approach to ensuring student wellbeing.

Research question five examined whether students' perceptions changed over two years regarding the university allocation of resources, student level of preparedness and critical thinking, and overall quality of interactions. Data collected in Fall 2018 from the same course during the same week of the semester was compared with the Fall 2020 data. Prior to comparative analysis, a series of independent samples t-tests revealed no significant differences in race ( $t(623) = .39$ ,  $p = .70$ ), gender ( $t(622) = 1.32$ ,  $p = .31$ ), GPA ( $t(623) = 1.02$ ,  $p = .31$ ), age ( $t(617) = .29$ ,  $p = .78$ ), or class level ( $t(623) = .47$ ,  $p = .64$ ). This allowed for a direct comparison between the two samples.

Interestingly, students' positive perceptions of the university's allocation of resources were significantly higher in 2020 than 2018 (see Table 2). In contrast, students' self-reported levels of preparedness and critical thinking was significantly lower in 2020 compared to 2018. The researchers believe this finding is especially worthy of consideration as this may be an important indicator of the ongoing toll that the prolonged conditions of the global pandemic are having on student learning within the realm of higher education.

While the level of faculty interaction was reported to be significantly lower in 2020 than in 2018, students rated the quality of interactions with their faculty as significantly higher and responded with overall praise for prompt and thorough communication during the pandemic. Because these are unprecedented times within higher education, such findings indicate the commitment of university educators and higher education as a whole to continue to serve students to the best of their ability, and findings indicate that students recognize and appreciate these efforts.

**Table 2**

*Results of t-tests & Descriptive by Year*

| Outcome                                 | Year |      |     | Year |      |     | t    | df     | *** .001 |
|---|------|------|-----|------|------|-----|------|--------|----------|
|   | 2018 |      |     | 2020 |      |     |      |        |          |
|   | M    | SD   | n   | M    | SD   | n   |      |        |          |
| Prepared 2+ drafts                      | 2.88 | 1.25 | 292 | 2.48 | 1.31 | 331 | 3.89 | 618.54 | ***      |
| Attended art                            | 2.52 | 1.30 | 293 | 1.64 | 1.11 | 330 | 9.04 | 577.20 | ***      |
| Asked student for help                  | 3.07 | 1.06 | 293 | 2.74 | 1.24 | 331 | 3.59 | 621.39 | ***      |
| Explained course material               | 3.22 | 1.03 | 293 | 2.71 | 1.17 | 332 | 5.73 | 623    | ***      |
| Prepared for exams with other students  | 3.25 | 1.11 | 293 | 2.66 | 1.33 | 331 | 5.95 | 619.4  | ***      |
| Worked with others on course projects   | 3.24 | 1.05 | 293 | 2.8  | 1.26 | 331 | 4.70 | 619.95 | ***      |
| Gave a presentation                     | 2.58 | 1.35 | 293 | 2.3  | 1.31 | 332 | 2.62 | 623    | **       |
| Combined ideas                          | 3.74 | 0.93 | 293 | 3.51 | 1.12 | 331 | 2.89 | 619.2  | **       |
| Connected learning to societal problems | 3.66 | 0.98 | 293 | 3.47 | 1.10 | 331 | 2.33 | 622    | *        |

|   |      |      |     |      |      |     |      |        |     |
|---|------|------|-----|------|------|-----|------|--------|-----|
| Included diverse perspectives in course discussion or assignments | 3.66 | 1.01 | 293 | 3.38 | 1.17 | 331 | 3.11 | 621.71 | **  |
| Examined own views on a topic or issue                            | 3.69 | 0.92 | 293 | 3.49 | 1.07 | 331 | 2.59 | 621.69 | **  |
| Tried to understand others' views                                 | 3.88 | 0.89 | 293 | 3.55 | 1.07 | 331 | 4.25 | 619.22 | *** |
| Learned something that changed the way you understand an issue    | 3.76 | 0.86 | 293 | 3.41 | 1.04 | 331 | 4.60 | 618.92 | *** |
| Connected ideas from courses to prior knowledge                   | 3.86 | 0.88 | 293 | 3.65 | 1.04 | 331 | 2.78 | 621.12 | **  |

**Faculty Interaction**

| Outcome                        | Year |      |     | Year |      |     | t    | df     |     |
|--------------------------------|------|------|-----|------|------|-----|------|--------|-----|
|                                | 2018 |      |     | 2020 |      |     |      |        |     |
|                                | M    | SD   | n   | M    | SD   | n   |      |        |     |
| Career plans                   | 2.68 | 1.17 | 293 | 2.24 | 1.17 | 331 | 4.65 | 622    | *** |
| Activities outside of course   | 2.37 | 1.27 | 293 | 2    | 1.17 | 331 | 3.73 | 622    | *** |
| Course topics outside of class | 2.69 | 1.22 | 293 | 2.23 | 1.22 | 331 | 4.77 | 622    | *** |
| Academic performance           | 2.86 | 1.16 | 293 | 2.39 | 1.23 | 331 | 4.92 | 619.87 | *** |

**Quality of Interactions**

| Outcome                 | Year |      |     | Year |      |     | t      | df     |     |
|-------------------------|------|------|-----|------|------|-----|--------|--------|-----|
|                         | M    | SD   | n   | M    | SD   | n   |        |        |     |
| Academic Advisors       | 3.72 | 1.10 | 289 | 3.9  | 1.03 | 322 | -2.175 | 609    | *   |
| Other faculty on campus | 3.5  | 1.10 | 283 | 3.71 | 1.00 | 300 | -2.35  | 581    | *   |
| Student services        | 3.49 | 1.08 | 283 | 3.71 | 1.00 | 298 | -2.58  | 579    | **  |
| Other Administration    | 3.39 | 1.15 | 285 | 3.69 | 0.99 | 311 | -3.42  | 561.60 | *** |

**Institution emphasis**

| Outcome   | Year |      |     | Year |       |     | t     | df     |     |
|---|------|------|-----|------|-------|-----|-------|--------|-----|
|   | 2018 |      |     | 2020 |       |     |       |        |     |
|   | M    | SD   | n   | M    | SD    | n   |       |        |     |
| Using learning support services                               | 2.99 | 0.67 | 293 | 3.42 | 1.04  | 331 | -6.21 | 572.07 | *** |
| Encouraging contact among students from different backgrounds | 2.82 | 0.79 | 293 | 3.31 | 1.082 | 331 | -6.46 | 600.45 | *** |
| Providing opportunities to be involved socially               | 2.98 | 0.67 | 293 | 3.26 | 1.11  | 331 | -3.83 | 553.99 | *** |
| Providing support for overall wellbeing                       | 2.85 | 0.73 | 293 | 3.25 | 1.09  | 331 | -5.55 | 582.18 | *** |

|   |      |      |     |      |      |     |       |        |     |
|---|------|------|-----|------|------|-----|-------|--------|-----|
| Helping manage non-academic responsibilities                                  | 2.67 | 0.87 | 293 | 2.93 | 1.14 | 331 | -3.16 | 608.26 | **  |
| Attending campus activities and events  | 2.93 | 0.72 | 293 | 3.09 | 1.09 | 331 | -2.13 | 579.36 | *   |
| Attending events that address important social, economic, or political issues | 2.86 | 0.74 | 293 | 3.11 | 1.13 | 331 | -3.42 | 575.37 | *** |

### Implications and Future Research

The current research revealed a number of interesting findings regarding students’ perceptions of online classes, preferences for teaching tools, and their perceptions of interactions with university faculty and staff members during the pandemic. While this research offers an important snapshot of student perceptions at the start of the Covid-19 pandemic, it can also help universities and faculty evolve their approach to course material delivery.

Modality preference revealed F2F was the most preferred overall. When examined based on class type, students overwhelmingly preferred seminar-style courses and skills/technology focused classes in the F2F learning environment while synchronously online was preferred for large survey courses. This is likely due to the less personalized nature of interactions within these classes and a lower likelihood of engaging as individuals. Students need to engage with their peers, and when it is necessary to move online, educators must find appropriate tools to offer them connection.

This body of work contributes to the sparse and conflicting previous research examining the impact of demographic characteristics on performance and satisfaction in online learning environments (Dousay & Trujillo, 2019). Female student’s preference for synchronous online learning more is consisted with Bolliger and Supanakorn’s (2011) finding that females prefer multimodal learning more than males. This could be due to the fact that female learners are more at ease using technology specifically for learning purposes (Luik, 2011; Nistor, 2013). While there were no racial or FG differences, it is important that future research continues to explore these characteristics as college student populations continue to diversify.

In terms of online teaching tools, students found online polls/chat tools to be the most effective tool within their online classroom spaces. In contrast, breakout rooms and semester-long projects were perceived by students to be the least beneficial. This study supports previous findings that students prefer a more interactive learning environment that allows them to connect with their peers and professors (Henderson et al., 2018; Major, 2020). Future research should continue to explore students' rationale for citing these preferences for learning modalities and tools and examine whether students' preferences are in fact correlated with academic performance and success.

Within these varied class structures, students' perceived effectiveness of the specific online tools also varied based on class size, making it important for instructors to consider both the course modality as well as the size of the class before choosing specific online engagement tools. Matching online tools successfully with specific courses of varied size is an important consideration as it appears to impact student likelihood for engagement in online environments. Further study should address the circumstances and tools that facilitate the most effective online learning and interaction.

Students' self-reported critical thinking measures revealed that they believed they were meeting or exceeding expectations; however, it is important to note that there was a decline in their self-perceptions from 2018 to 2020. One possible reason for this decrease is that students' level of preparedness also showed a steep decline, specifically in relation to working with other students. A possible side effect of the isolating nature of forced online classes is the inability of students to form social bonds digitally in the same way they used to in person. Future research is needed to examine the impact that online course work has on forming peer relationships among students. As data for this analysis is based on students' self-perceptions, future research should consider incorporating additional measures beyond self-report items for critical thinking and preparedness in order to externally assess students in these areas both for F2F and online courses.

When exploring students' perceptions of the university during the pandemic, students indicated that resources were effectively allocated for learning support and academics; conversely, they noted fewer resources for non-academic support (such as campus activities and events). This is understandable due to the health and safety limitations during the pandemic. It is important to understand moving forward that students appreciate a more holistic commitment to their well-being, beyond just in academics. Additionally, findings revealed more limited interactions with university faculty, advisors, and other staff members during the forced shift to online classes although the quality of interaction with individuals from these groups was perceived positively by students. This is an important finding in regard to the additional efforts that many areas of higher education undertook in order to aid in facilitating the continued student success within unprecedented teaching and learning circumstances. Future research exploring the specific nature of these interactions may provide additional insights as to best practices to carry over beyond the pandemic, if and when it finally concludes.



### Conflicts of Interest

The authors declare that there are no conflicts of interest regarding the publication of this article.

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