

## Modality Demand Trends Post Covid19 in a Public University.

*Tendencias de preferencia en la modalidad en una universidad pública tras la COVID19.*

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**ABSTRACT:** This paper investigates the effect that Covid19 has had on student demand for six specific educational modalities in the Woodbury School of Business (WSB) at Utah Valley University (UVU), in Orem, Utah, USA. Those six learning modalities are Face-to-Face (F2F) , Hybrid, Independent Study, Internship, Live Interactive Video, and Online (ONL). Even though the WSB had been migrating towards more online offerings, the Covid19 disruption that occurred from spring semester 2019 and had mostly ended by Spring semester 2021 forced a massive migration to online. The two-hypothesis evaluated in this paper are whether that change to mostly online will revert to the pre-Covid19 ratios of live and online; and second, that students are choosing online over live for rational reasons, despite their preference for live courses.

**KEYWORDS:** Face-to-Face classes, Hybrid classes, Independent Study, Internship, Live Interactive Video Classes, Online Classes.

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## **1. INTRODUCTION**

Covid19 caused huge disruptions at all levels of education, and higher education, in particular, was severely challenged by the disease. Many institutions struggled to continue college courses during the pandemic. Courses that required students to be in close proximity, such as dance, sports, and theater, were shut down at many universities across the world. Courses where distancing and online delivery options were available were able to continue, although in these courses there were many challenges with adjusting for sick students, live streaming, faculty adaptability, isolation, to mention a few. This paper looks at recent modality data in order to see how much the recent pandemic changed student demand patterns in how they choose courses and any evidence in the data that those changes are going to be long-term, even permanent. Because the WSB is the largest school of business in Utah, with about 5,000 students, the data should be representative and applicable to other similar colleges around the world. The educated guess of the authors was that the changes forced by Covid19 would have happened eventually, anyway (first hypothesis), and so the so-called "new normal" will not revert that much back to the old delivery methods, especially live course sections.

The second hypothesis is that although students are saying that they prefer live courses, in practice they enroll more often in online course sections due to the practicalities of their complicated lives. This paper evaluates course modality data from the WSB from summer semester 2017 through fall of 2021 to show the patterns that have developed in the WSB during that time period, especially those due to the pandemic.

## **2. RESEARCH PROBLEM**

Student demand patterns for courses taught in the WSB have changed drastically since the beginning of the Covid19 pandemic. The once predictable student demand patterns, where online was growing at a slow and steady rate from year to year, was moved in a matter of weeks to mostly online and live streaming formats, starting part way into the fall semester 2019 at UVU. Up to that fateful event, most department chairs within the Woodbury School of Business tried to follow student demand for specific modalities in their scheduling of courses, although some of the changes that occurred in the three years before Covid19 were due to the desire to move to promising hybrid modalities that provided more flexibility and to take advantages of the "flipped classroom".

According to the Derek Bok Center for Teaching and Learning (2022) at Harvard University, the "...flipped classroom is structured around the idea that lecture or direct instruction is not the best use of class time. Instead, students encounter information before class, freeing class time for activities that involve higher order thinking." And "Although flipping classrooms has long been the practice within certain disciplines (even if it was not given that name), the concept took off as technological changes made it easier to access and create educational materials." (The Derek Bok Center for Teaching and Learning, 2022). The Flipped Classroom is also considered a part of what is now called "Active Learning", as it requires students to engage material prior to class (Ibid). A few courses in the WSB are using the Flipped Classroom, as new teaching paradigms begin to take hold. The Flipped Classroom is a good example of how live teaching, often in a hybrid environment, is changing how education is delivered and is another factor in how traditional lecturing is diminishing in use and how partial to full online use is growing. Though not a part of this study, such practices as the Flipped Classroom are part of the methods being used to improve teaching and to help bridge the gap between live and online learning. The reason being that as courses require students to engage material prior to going to class, they are practicing learning skills that are required for successful

online learning, that is, they are engaging in the material with less reliance on a professor, etc.

Continuing with the research in this paper, some departments, and programs in the WSB, such as accounting, economics and entrepreneurship resisted moving to online formats. The thinking for some professors has been that some courses and even disciplines require live interaction with students to be effective. However, even within the WSB, professors have shown that difficult applied quantitative courses like business calculus and operations management can be taught effectively, and the test scores of online students exceeded the test scores of students in live sections (Adams et al., 2006). Obviously, online courses can have selection bias and thus can attract better than average students, but the old belief that quantitative courses cannot be taught effectively online is just not true (Ibid).

The Entrepreneurship Bachelor's degree that the WSB has offered for seven years is being discontinued due to low enrollments, so is not important to this study, except for the reason those specific professors resisted going online. Some entrepreneurship professors have resisted online formats as they have been using curriculum that requires heavy personal interaction with each of their students in most of their courses. That curriculum is also very interactive in nature, where students work individually and in groups to develop new business ideas or specific new businesses with their professors and fellow students. Other areas of study in the WSB have also expressed their belief that their curriculum is "special" and must be taught in a live format to be effective. As much as that may be true, and these authors accept that premise, many colleges have been successfully offering entrepreneurial courses online, including Coursera, Udacity, Harvard, Udemy, edX and Wharton (but there are many more schools and organizations offering online entrepreneurship courses<sup>1</sup>). The key issue could be that higher education needs to find more effective ways to bring effective live practices into online courses, which many educators have recognized for years.

McMillan and Chavis (1986) defined Sense of Community (SoC) as "...a feeling that members have a belonging, a feeling that members matter to one another and to the group, and a shared faith that members' needs will be met through their commitment together" Their research indicates that there are four factors that contribute to an individual's SoC: membership, influence, shared emotional connection, and reinforcement of need. An interesting recent finding is that the more students adapt to and accept online learning, their desire to engage with other students taking online classes online decreases (Mays and Ross, 2022). So, while educators are trying to bridge the gap between live and online modalities by "Developing a Sense of Community" (Ibid) and a connection with their professors in online courses, the students are tending to isolate more and resist efforts to engage them in socializing experiences such as teamwork, discussion boards, consulting projects, etc. Mays and Ross (2022) concluded that it is "essential to improve students' understanding of why engaging with other learners is important in college" (Ibid).

The issue of whether specific business curricula require live formats to be effective is not the problem or focus of this paper, still the rapid move to online due to pandemic issues has increased the friction in the fight over live versus online modalities. The real and pressing issue for the WSB is how to get a better feel for student demand patterns in the future, so that the WSB and the university can better anticipate student needs. Students are presently choosing online over live formats, even in courses that traditionally have

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<sup>1</sup> <https://www.intelligent.com/best-online-courses/entrepreneurship-courses/>

been seen as more adapted to live instruction by educators. The authors believe that this information will be important to many colleges and universities, even those with different missions and student populations. The results will also open a window into how well students are adapting and accepting online modalities.

And, in relation to different kinds of universities, with different student populations, "(f)aculty at private institutions (tend) to perceive teaching online as optional, with no sense of urgency on the part of administration to teach online" (Windes and Lesht, 2014); however, if those intuitions saw "peer schools" migrating to online, they then saw it as a "competitive necessity" to do the same (Ibid). "Community college faculty with online teaching experience were less favorable toward online education than were faculty with online teaching experience in other settings and even as compared to faculty without online teaching experience at community colleges" (Ibid), an interesting paradox. "The recent moves by elite universities to offer free online classes to large audiences is adding weight to the position that online education is not only here to stay, but also will be a major player within higher education (Ibid). This same research also seemed to indicate that the act of "teaching online itself may reduce concerns about quality" in online courses, at least at public institutions (Ibid). But the most telling finding in the Windes and Lesht study was that the "single motivating force to encourage online teaching" is "student demand" (Ibid)! This finding is consistent with Allen and Seamans report (2008) that found that the most important motivational factor for teaching online was flexibility in meeting students' needs. Our current paper will begin to address this important finding.

### **3. RESEARCH BACKGROUND**

The idea for this article started in the fall of 2019 when UVU mandated that all classes possible be moved to delivery in online or livestreamed formats. As the restrictions began to lift by spring of 2021, online sections were still filling first and the anticipated return to more traditional live modalities has not occurred as much as was anticipated by administration or schedulers. That reality, though not totally unexpected, is a major shift away from traditional live formats and has huge policy implications, such as classroom space on campus, technology needs, etc.

Utah Valley University invested about \$1 million to deliver live courses using livestreaming as the pandemic worsened in the spring of 2020 and then continued for the rest of 2020, while trying to create social distancing or moving to totally online modalities. In order to continue live sections, provide social distancing and contact tracing, students were divided up into roughly equal sized cohorts and then required to attend half or less (some large sections had to divide up into three groups, so students were expected to attend 1/3 of the time) of the live sections and attend the other class periods by livestreaming. For a time, students had to sit in the same seat every time they attended a live class, also to help in contact tracing should Covid19 cases appear in students.

The situation rapidly became political. After several iterations in 2020, the Legislature for the State of Utah (Coronavirus, Utah 2021) weighed into this modality issue and Senate Bill 107 mandated that "All schools (K-12) are required to have 4 days of in-person instruction, No soft closures allowed, (and) Test to Stay process is implemented when the following occurs: ..... etc. (Utah State Legislature, 2021a)." Other restrictions applied, which were part of the House Bill 294, which came out on April 10, 2021 (Utah State Legislature, 2021b), but for the subject of modalities, the Legislature of Utah mandated live instruction for at least "4 days" a week for K-12 and considered similar mandates for higher education (Utah State Legislature, 2021a). The Senate Bill 107 also mandated "for fall semester in 2021, an institution of higher education shall offer a number of in-person courses that is at least 75% of the number of in-person courses that the institution of higher

education offered for the analogous semester that began immediately on or after August 1, 2019 (and) for spring semester in 2022, an institution of higher education shall offer a number of in-person courses that is at least 75% of the number of in-person courses that the institution of higher education offered at the beginning of the analogous semester that began on or immediately after January 1, 2020" (Utah State Legislature, 2021a). Therefore, UVU was mandated to schedule 75% of its live course sections from fall 2019 into fall of 2021. The situation continues to be dynamic, so it is possible with further outbreaks that specific modalities for higher education in Utah could be mandated. So, the urgent need for now is to forecast student demand for specific modalities moving forward.

#### **4. TEACHING MODALITY REVIEW**

Online teaching is becoming commonplace for instructors as universities seek to increase enrollments and tap into unexplored markets. Many instructors, however, are often unprepared for the nuances of distance education and apprehensive about making the transition to online learning (Trammell & LaForge, 2017). In fact, "In the decade since 2002, total online enrollment has more than quadrupled..." (Trammell & LaForge, 2017). Covid19 has taught educators that online learning is more of a commonplace for students than it once was, and if universities seek to increase enrollments for all programs, there may be unexplored markets that once were minimized prior to this global pandemic. This finding has been true in the WSB as online has grown rapidly in recent years, and really exploded due to the expediciencies of Covid19.

Many have studied how to blend the best practices in F2F and ONL teaching, and how to make online as accessible and user friendly as live courses. One of the most recent and thorough "descriptive studies" was done by Singh et al (2021). In that study a variety approaches for bridging the gaps in weaknesses of live and online pedagogies was presented (ibid). Directly related to this paper, Singh quoted the findings of Sim et al. (2020) (who) determined from their study that most students were highly optimistic and showed increased enthusiasm in regard to online learning. There were also many students who felt online learning was lonely and contributed to them feeling lazy versus being on campus for a traditional classroom experience, which, interestingly,

created a sense of productivity. This feeling of loneliness (and perceived loss of productivity) could also be due to the abrupt restrictions and forced quarantine that would contribute to that sense of loneliness during the global pandemic as well (Sim et al., 2020).

Martinez et al. (2021) at Miguel Hernandez University (UMH), Spain looked at the struggles of transitioning a masters' level student population from live to online in an engineering school. They found that "live lecture broadcasting has brought online students the same level of class interaction as F2F students, while lecture capture has increased the flexibility of learning for both groups" (Ibid). Thus, they allowed students in any modality to "choose their preferred method and time of studying: asynchronous (lecture capture) or synchronous (on-campus or live broadcasted lecture)" (Ibid). This system guaranteed "Interaction between professor and students, and even between students" (Ibid). Additional findings from Martinez et al. (2021) were that:

1. "Enrollments...and the geographical origin of the students have improved due to the flexibility and opportunities the new groups provide for both full-time students and students in professional careers."
2. "Students' satisfaction and the dropout rate have improved with the new methodology."
3. The quality of the courses is perceived as better by both students and the university.

4. "...collaborative work has been extended using state-of-the-art technologies such as Open BIM-based software, improving the sense of connection and teamwork among students and staff."
5. The success of the methodology is also due to the program's management structure and actions. This, as well as the monitoring of students' actions, has had an impact on satisfaction and the dropout rate.
6. Average grades increased, although no statistical difference was found between the two groups of students (Martinez et al., 2021).

The Martinez et al. study (2021) strengthens the argument "...that 'anytime and anywhere' learning approaches, together with support material and student's monitoring, improve(s)...students' learning process." And "that both blended and online methodologies can improve grades and reduce dropout ratio in higher education."

Julien and Dookwah (2020) showed in a study of university students who transitioned from live to online, that "F2F learning is (was considered) essential for Mathematics and F2F is necessary for human interaction. Students also revealed that while they appreciated both forms of learning most of them noted that the teaching of Mathematics ought to be conducted F2F (Ibid). The UVU experience so far supports and strengthens this finding.

Julien and Dookwah (2020) also noted that "...some students felt that ONL (online learning) was extremely convenient and comfortable, and they experienced minimum stress in completing exercises. This finding was also claimed by Croxton (2014) who stated that: "Online learning holds great appeal to a large number of students because it offers flexibility in participation, ease of access, and convenience...". This same study by Julien and Dookwah (2020) study also found that online learning was more economical for students, with lower expenditures "...on transportation, meals, and printing assignments. In addition, they also claimed that since most of the classes were recorded, they listened to them at a subsequent time for further clarification. To underscore the importance of (online learning) a student carefully stated that it was: "Important that students can often revisit the recording to accentuate clarification. I check the re-cording and discuss with my peers after class or before the next class." Hence, (online learning) is valuable because students are better able to use...different platforms for communication, research, and networking (Ibid). And, it will be noted, that recording key material for future reference is a key trait in well-designed online courses.

The three main recommendations from the Julien and Dookwah (2020) study were that "students ought to be given more opportunities to study (online), be provided with social opportunities during (online), and a blended form of instruction should be given for Mathematics courses."

## **5. TEACHING MODALITIES DEFINED**

To clarify how modalities were analyzed in this paper, first the authors started with the modalities as they are counted in the university's databases. The authors first eliminated courses and programs that did not affect the business students of the WSB. Those programs were Co-op (off campus cooperative courses/programs), Latino Scientists (a program offered to pre-college Latino students in the state), International study programs (the WSB, prior to Covid19, had international programs in Scotland and China, primarily), and Distant Education off Budget Global Aviation courses.

The remaining 10 modalities for the WSB were then as follows: Face-to-Face(F2F), High School Concurrent Enrollment, with waived tuition, Honors, Hybrid, Independent study, Internship, Live interactive Video, Live interactive Video-Hybrid, Online (ONL), and Weekend.

Those 10 modalities were then paired down to six main modalities, which are as follows: Face-to-Face (F2F), Hybrid, Independent Study, Internship, Live Interactive Video, and Online (ONL)

High School Concurrent Enrollment was not counted or analyzed as part of this study as that is done in high schools, with high school age students, and does not affect WSB class scheduling with college level students. Independent study was also not counted, as that includes one on one courses with designated instructors, mostly students from other disciplines, and was a very small number of students. Both types of live interactive video were counted as live, and along with Honors and Hybrid courses were counted as live and associated with their time of day. As a result, the three relevant teaching modalities included for further statistical analysis in this study are F2F, hybrid, and ONL. In addition, the live or synchronous modalities were offered at too many time periods throughout the weekdays and Saturday. In order to make this study easier to follow and to control the endless number of ways to slice and analyze the data and make it more meaningful, these live or synchronous modalities were grouped into morning, afternoon, evening, and Saturday time frames, to see the demand for those general time frames. These simplifications, for synchronous and asynchronous offerings, resulted in just five time-of-day classifications: Morning, Afternoon, Evening, Flextime (asynchronous online), and Saturday.

## 6. METHODOLOGY

### a. Assumptions/Limitations

Modalities and schedules are quite complicated, so the data gathered had to be simplified and some decisions made about how to count certain courses were made. First, for live sections, the data was simplified and separated into morning, afternoon, evening, and Saturday sections. For online sections, decisions were made about how to count those that were synchronous versus asynchronous. The first, synchronous sections, were counted as online and the asynchronous were, of course, counted as online.

### b. Data Characteristics

#### I. Teaching Modalities Data

The percentages of total students attending spring, summer and fall semesters did not change much from Fall 2019 to Fall 2021; however, student enrollments over the same period decreased by about 5.2 percent. The Fall semester stayed at about the same overall percentage, spring increased by slightly over one percent, and summer decreased by slightly over one percent. None of those percentages are of note, but available in the data set. The comparison of the main teaching and time classification modalities, however, shows some significant changes (see Tables 1-4, below).

**Table 1: Spring, Summer, and Fall 2019 Percentage Enrollment by Teaching Modality and Time**

Teaching Modality	Saturday	Afternoon	Evening	Flextime	Morning	Percentage
Face to Face	0.7659	15.4953	15.5830		19.4283	51.2724
Hybrid		2.2790	0.7924		4.7308	7.8022
Independent Study				0.1090		0.1090
Internship				1.9465		1.9465
Live Interactive Video		0.0106	7.5362		1.8455	9.3924
Online				29.4775		29.4775
Percentage	0.7659	17.7849	23.9117	31.5330	26.0045	100

**Table 2: Spring, Summer, and Fall 2021 Percentage Enrollment by Teaching Modality and Time**

Teaching Modality	Saturday	Afternoon	Evening	Flextime	Morning	Percentage
Face to Face	0.1478	5.7980	5.7395	0.1450	6.0295	17.8598
Hybrid		3.4665	2.5351		6.5399	12.5415
Independent Study				0.0920		0.0920
Internship				1.8044		1.8044
Live Interactive Video			3.6897			3.6897
Online		3.0203	2.9590	54.0173	4.0160	64.0126
Percentage	0.1478	12.2849	14.9232	56.0588	16.5853	100

**Table 3: Spring, Summer, and Fall 2019 Percentage Enrollment by Teaching Modality and Semester**

Teaching Modality	Fall 2019	Spring 2019	Summer 2019	Percentage
Face to Face	22.0210	23.8107	5.4408	51.2724
Hybrid	3.7495	3.9782	0.0745	7.8022
Independent Study	0.0718	0.0239	0.0133	0.1090
Internship	0.5691	0.6887	0.6887	1.9465
Live Interactive Video	4.5499	4.8424		9.3924
Online	11.7750	9.8019	7.9005	29.4775
Percentage	42.7363	43.1459	14.1178	100

**Table 4: Spring, Summer, and Fall 2021 Percentage Enrollment by Teaching Modality and Semester**

Teaching Modality	Fall 2021	Spring 2021	Summer 2021	Percentage
Face to Face	10.4331	5.6837	1.7430	17.8598
Hybrid	6.5287	5.1901	0.8227	12.5415
Independent Study	0.0530	0.0195	0.0195	0.0920
Internship	0.6303	0.6303	0.5438	1.8044
Live Interactive Video	1.5255	2.1642		3.6897
Online	23.5603	28.3794	12.0730	64.0126
Percentage	42.7308	42.0671	15.2021	100

## II. Time-of-Day Classification Data

Noticeable changes in student demand patterns really become apparent as shown in Tables 5 and 6 below. First, the already low number of enrollments on Saturday classes decreased by almost 81 percent, and Saturday enrollments (i.e., classes) disappeared entirely in summer and fall of 2021). Second, and more noticeable, the other four time period percentages of total enrollments changed as follows from 2019 to 2021:

1. Morning classes changed from 26% to 16.59%, a 36% drop.
2. Afternoon classes changed from 17.78% to 12.28%, a 31% drop.
3. Evening classes changed from 23.9% to 14.92%, a 37.6% drop.
4. Flextime classes changed from 31.53% to 56.06%, an increase of 77.8%



**Table 5: Spring, Summer and Fall 2019 Percentage Enrollment by Time and Semester**

Time	Fall 2019	Spring 2019	Summer 2019	Percentage
Saturday	0.3670	0.3989		0.7659
Morning	12.142	11.9665	1.8960	26.0045
Afternoon	8.2861	8.6770	0.8217	17.7849
Evening	9.5253	11.5889	2.7975	23.9117
Flextime	12.4159	10.5146	8.6026	31.533
Percentage	42.7363	43.1459	14.1178	100

**Table 6: Spring, Summer and Fall 2021 Percentage Enrollment by Time and Semester**

Time	Fall 2021	Spring 2021	Summer 2021	Percentage
Saturday		0.1478		0.1478
Morning	8.9104	6.3893	1.2857	16.5853
Afternoon	5.6056	5.8148	0.8645	12.2849
Evening	6.1550	6.8913	1.8769	14.9232
Flextime	22.0598	22.8240	11.1749	56.0588
Percentage	42.7308	42.0671	15.2021	100

Flextime and online/asynchronous exploded, but that was to be expected. The university mandated online courses in spring of 2020 and was just beginning to open up more live courses by fall of 2020.

### c. Statistical Analysis

Hypothesis testing procedures were done on three stages; first for the difference between two independent proportions on combined samples of the teaching and time-of-day classification modalities of 2019 versus 2021; second, teaching modalities compared individually for spring, summer and fall of 2019 versus corresponding spring, summer and fall of 2021; and third, time-of-day modalities compared individually for spring, summer and fall of 2019 versus corresponding spring, summer and fall of 2021. All of these statistical tests of difference between proportions were performed at the 5% significance level. The first set of tests were performed to determine if teaching modalities for the combined data in 2019 are statistically different than 2021. The second set of individual tests of proportions for each semester in 2019 were compared to the corresponding semester in 2021 to determine if the proportions for teaching modalities were individually statistically different by semester. The third set of individual tests of proportions for each semester in 2019 were compared to the corresponding semester in 2021 to determine if the proportions for time-of-day modalities were individually statistically different by semester. The P-values produced by XLSTAT software for all tests performed were zero or essentially zero, so the statistical analysis showed what the authors already expected, that the disruption in higher education due to Covid19 created a unique departure from the past, and the pattern for student enrollment in the different teaching and time-of-day modalities investigated in this study has truly changed.

A feeling permeated through the university, from upper administration, that once the Covid19 pandemic subsided significantly and that restrictions on classrooms, etc. eased that students would readily go back to their preferred live courses. That migration back to live courses did not happen from spring 2021 to fall 2021. In a closer look at the data, the few courses that saw any sort of significant migration back to the live modality were 2000 level courses and mostly quantitative, such as Business Calculus. As of the writing of

this paper in early spring of 2022, the enrollment in new semesters continues to show that online sections of courses are still the ones that fill first.

## **7. SUMMARY AND CONCLUSIONS**

The first hypothesis for this study was that the push to online caused by the pandemic was just speeding up a transition to more online that would have occurred anyway. The evidence so far is that enrollments for online has increased from 29.48 percent of all enrollments in 2019 academic year (Table 1) to 64 percent in 2021 (Table 2), and that is a huge increase. For Flextime, which includes independent study and internship courses the numbers went from 31.53 percent in 2019 (Table 5) to 56.06 percent in 2021 (Table 6). Independent study and internship numbers did not change much. For F2F, the huge drop from 51.27 percent in 2019 (Table 3) to 17.86 percent in 2021 (Table 4) was expected and statistically supported. When the authors looked at which classes had increases in live enrollments in the fall of 2021, it was only in 2000 level courses, such as Business Calculus. In the upper division courses, the move to more online continues.

The second hypothesis is that although students are saying that they prefer live courses, in practice they enroll more often in online course sections due to the practicalities of their complicated lives. This hypothesis is only indicated, but not proven. More time must pass to see if in the future there is a bigger move back to live courses, which is just not happening at present. In the upper division courses, the move back to live sections is just not occurring now.

### **a. Unanticipated Patterns**

Data analysis often reveals unanticipated patterns in what is going on in a dynamic situation. In this case of modalities, it was summer semester that brought up the biggest surprises over the last two years (2019 to 2021) with Covid19 effects on modalities. Live F2F classes in summer have decreased from 5.4408 percent in 2019 (Table 3) to 1.743 percent in 2021 (Table 4); a significant drop by 67.96 percent, while ONL have increased from 7.9005 to 12.0730; a significant increase by 52.8 percent. Looking at what that means for the three time periods of the day in summer, morning decreased from 1.8960 in 2019 to 1.2857 in 2021 (Tables 5 and 6), a significant drop by 32.19 percent; similarly afternoon increased by about 5 percent, evening decreased by 32.9 percent, and Flextime increased by 29.9 percent. Meanwhile, the percentage of summer enrollments was basically the same after two years of Covid19; namely 14.1178 in summer 2019 to 15.2021 in summer 2021 (Tables 5 and 6). Flextime is now 2.775 times bigger than the live day, afternoon and evening courses combined in the summer. We, in the WSB, now manage and schedule summer semesters as basically online, as live courses continue to shrink in enrollments.

Evening enrollments, too, have really dropped in the last two years, although schedulers were seeing that trend before the pandemic, starting in about 2018. Still, that trend really gained steam with a 32.90 percent drop in enrollments in the evening courses 2019 versus 2021. Saturdays also dropped off, to the point that in all of 2021 only one course section was offered all year on Saturdays.

### **b. Discussion and Implications**

This study has shown that for an open enrollment university the huge move towards online caused by the pandemic has become entrenched and that there is no indication of a rebound back to more live courses. This finding is in line with the number of campus closures versus the number of college closures (861 colleges and 9,499 campuses since 2004, according to Barshay, 2022). While a significant number of colleges have closed over the past 10 years, the number of campus facilities closures is much higher, thus following the larger percentages of online course offerings being seen in higher

education. Picciano et al. (2010) analyzed six years of data and reported that public colleges and universities, particularly community colleges, are offering online classes at a much higher rate compared to four-year private colleges.

As shown in the Mays and Ross study (2022), another disturbing trend is that students who embrace online tend to self-isolate and try to avoid attempts to socialize the students and to add other soft skill development in that modality. Our experience in the WSB is the same.

### **c. Limitations**

The findings of this study may or may not be applicable to colleges and universities with different student populations, demographics, programs, or missions. Utah Valley University (UVU) is an open enrollment institution with a unique student body. Institutions with tighter selection criteria and with traditional students will see different demand patterns for modalities. However, we believe that private institutions that continue to see "teaching online as optional" (Windes and Lesht, 2014) do so at their own peril. Our study strengthens the emerging evidence that student demand is now the major driving factor in modality choice (Ibid) and they are choosing online at an increasing rate.

This paper did not address the significant issue of cheating that plagues online instruction. The value of online education will be diminished to the extent that accurate and meaningful evaluation of students' skills cannot be guaranteed. The Woodbury School of Business (WSB) is using several platforms to reduce cheating, including Examity and Proctorio, among others. Long-term viability of online cannot be achieved until cheating can be prevented and until other soft skills can be developed in students and instructors in distant education environments.

### **d. Future Research**

This research data set now needs to examine the changes that occurred in specific departments in the WSB to see if there are differences in the way modalities are scheduled or in the patterns for student enrollments in different disciplines and specific classes. The next step after finding out departmental trends in this research is to survey students and find out their stated preferences for modalities. That survey has already been given and is being evaluated. Then, the stated preferences can be compared more accurately with what courses students are actually registering for.

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