

Cost/Quality Differentials, Online/On-Campus Study

West Texas A&M University – July 2020

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Executive Summary

Post-Secondary Education Matters - The supply of an educated labor force with [employment potential](#) is changing. [Inflation-adjusted state appropriations](#) for higher education have been stagnant since 1990 and have declined by 16 percent since 2007. Moreover, since education is a relatively labor-intensive industry, costs per student have risen faster than inflation and are likely to do so in the future. These financial pressures have lent urgency to the search for innovations that can "[bend the cost curve](#)" in higher education. At WT, pre-COVID-19 online student population equaled about one third of WT's total of 10,000 students. Our online offerings are not solely a response to current events, but WT's long held commitment to accessibility.

The Cost/Value Equation - Cost pressures from reductions in public funding are most important for non-selective postsecondary institutions offering standard college coursework. They find some evidence that colleges are charging lower prices for online coursework, suggesting that advances in online learning technology might be able to bend the cost curve in higher education. There are two main caveats to their results. First, it is possible that the [quality of education](#) suffers when more content is delivered online. Second, the general equilibrium effects of online education may exert competitive pressure on the entire postsecondary education sector, lowering prices and/or increasing efficiency.

Services Not Applicable to Online Students - The campus environment offers student support services and enrichment opportunities that may not be [applicable to online](#) learners. *Underutilized Services Currently Paid by Online Students include:* athletic fee, recreational sports fee, medical services fee, parking services fee, bus operations fee, and miscellaneous services including summer registration programs, welcome events, and similar occasions leading to charges of little benefit to online students of **\$354/year per student**.

Creating an Online Infrastructure for Quality Delivery – It is Not Free - Most online courses include a technology fee, on either a per-credit hour or per-term basis. The fee covers costs such as technology improvements, increased bandwidth with backup so there is never an interruption in service, 24/7 tech support, virtual labs, instructional designer assistance for faculty members, software to prevent plagiarism, and online learning management systems; these are all [reoccurring costs](#).

[Faculty workloads](#) are often the same amount, if not more, when teaching online as compared to face-to-face, and salaries for online faculty are sometimes less, without the benefits of belonging to the on-campus faculty. At West Texas A&M University, most

online faculty also have on-campus teaching assignments and become a working member of the full WT academic community.

Ongoing Technology Infrastructure Upgrades Consistent with Best Practices in Online Delivery include: learning management systems, student information systems, information and cybersecurity, data backups, instructional design and related personnel, software for laboratory instruction, Internet services, data center and infrastructure, hardware replacement totaling at WTAMU approximately **\$366/year per student**.

Online and on-campus costs are approximately equal for students.

Implicit Student Savings with Online Delivery - Traditional colleges come with a certain kind of experience: a student union filled with students, dorms and dining halls, academic buildings filled with faculty offices and classrooms, and sports teams to cheer on. Food and housing are the most obvious expenses associated with campus life, which, if eliminated, generate substantial savings differential for online [students living at home](#). The amount of savings will drastically differ by institution and location across the state, and importantly, these savings accrue to students. Our goal at WTAMU is to reduce costs to the student while still providing a high quality experience.

On-Campus Space Utilization - Physical facilities requirements for on-campus and online instruction differ. Classroom space demands are reduced when required seat spaces are reduced. Returning to campus in the fall semester, post COVID-19, on-campus populations in classrooms will be reduced by 50% in order to allow appropriate social distancing. Students not present in class can access lectures through [lecture capture technology](#): synchronous access is a powerful benefit. WT's current student population could grow to 15,000 without additional space if new student growth was online, while maintaining our current on campus population of 7,500 students.

Quality of Instruction and Impact on Learning - Quality of instruction and learning opportunity cannot be equated with modality of delivery. The art of good teaching is little affected whether or not that teaching occurs face-to-face or online. [Good teaching](#) requires a bond of trust between the student and the institution worked out through the faculty. Moreover, it would be unfortunate to compare [new modality teaching](#), such as what occurred during the COVID-19 pandemic with three decades of practice and development of online instruction ubiquitous in all effective online programs.

Summary

While the costs and benefits of on-campus versus online instruction can be deliberated at length, it is clear from the preceding observations that the two are nearly equal. The assumption that all online courses are cheaper is not universally true. The costs to students should decrease for online study, and the costs to WT to grow the student population would not increase space requirements, or decrease quality.

Post-Secondary Education Matter

Contexts and drivers of [cost](#) and value in U.S. Higher Education are changing dramatically. The earnings premium associated with post-secondary education and training in the United States has risen markedly since 1980, but it is now [tapering off](#), and adding less development of wealth.

The supply of an educated labor force with [employment potential](#) is changing. Yet the decline in the share of public funding for U.S. higher education is a key impediment to growing the supply of skills. [Inflation-adjusted state appropriations](#) for higher education have been stagnant since 1990 and have declined by 16 percent since 2007. Moreover, since education is a relatively labor-intensive industry, costs per student have risen faster than inflation and are likely to do so in the future. These financial pressures have lent urgency to the search for innovations that can “[bend the cost curve](#)” in higher education.



From: <https://fredblog.stlouisfed.org/2018/07/is-college-still-worth-it/>

Impacts of Online Learning

Online learning technologies are regarded by most observers as the best hope for [cost-saving innovations](#) in higher education, with the primary channel being reduced labor costs through larger class size and less face-to-face interaction. Several assumptions that lead to the belief that online instruction costs less may not be accurate. These assumptions are addressed below. Much research on the use of online technology in the classroom has focused on its potential for “disruptive innovation” in higher education, from superstar

professors teaching elaborate courses developed by teams to Massive Open Online Courses (MOOCs) offering top-notch instruction to students worldwide.

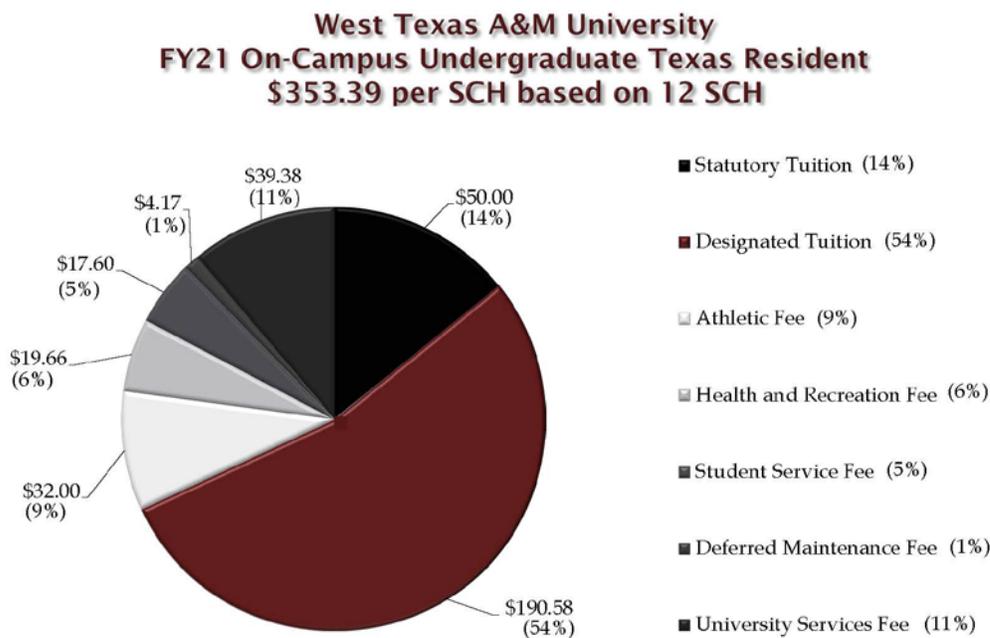
Online Learning Might Reduce Costs

The most significant academic research on [the financial efficacy of online](#) education is offered by Deming, Goldin, Katz, and Yuchtman (2015). Deming explores whether online education can “bend the cost curve” in traditional higher education. They focus on degree-seeking undergraduates attending open access and less-selective postsecondary institutions, a group that accounted for about 59 percent of all U.S. postsecondary enrollments in 2013 based on data from the Integrated Postsecondary Education Data System (IPEDS) of the U.S. Department of Education. West Texas A&M University is a member of this group.

What Students Pay

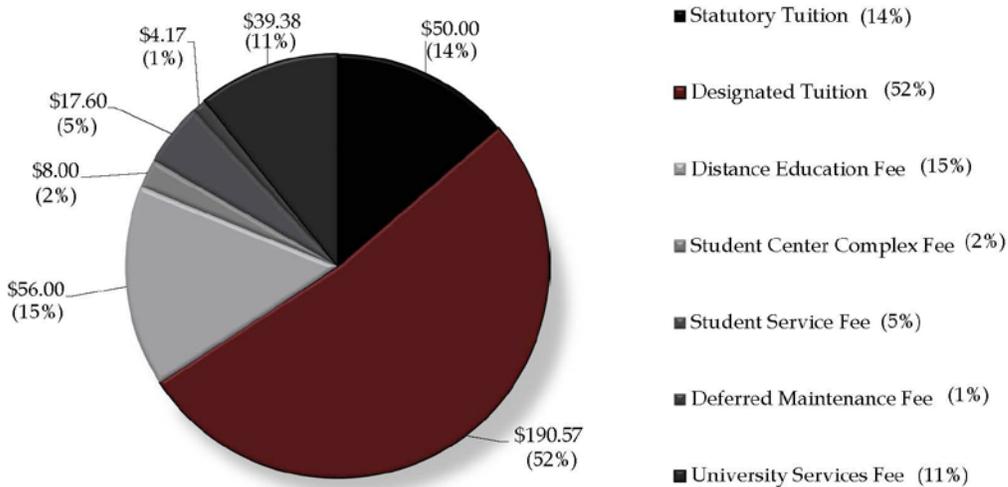
Below are tuition and fees for a typical, Texas resident 12 Semester Credit Hours (SCH) of study, on-campus, and off-campus. Note that off-campus fees are slightly more. These figures exclude room and board in both cases.

On Campus (FY 21)



Off-Campus (FY21)

West Texas A&M University FY21 Off-Campus Undergraduate Texas Resident \$365.72 per SCH (based on 12 SCH)

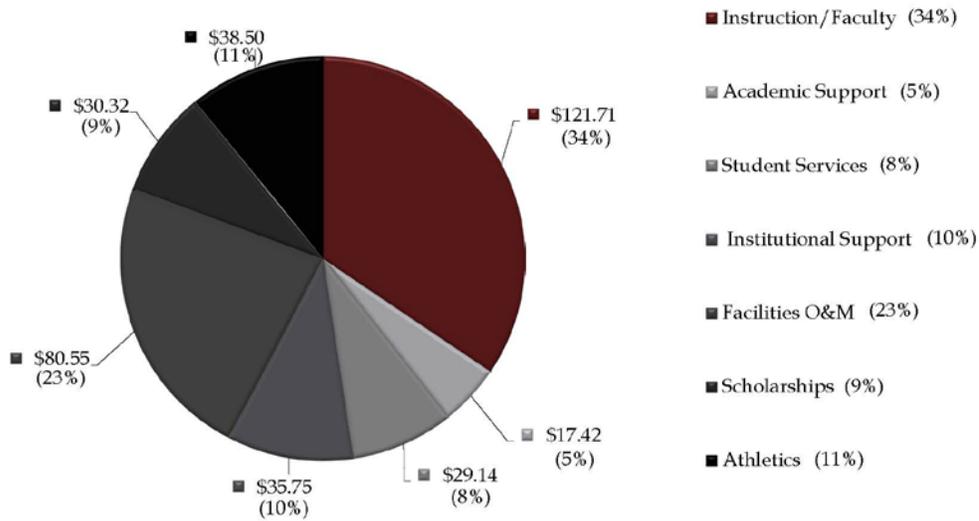


What the University Spends

Below are the costs per Student Credit Hour to the university to support student learning and campus offerings.

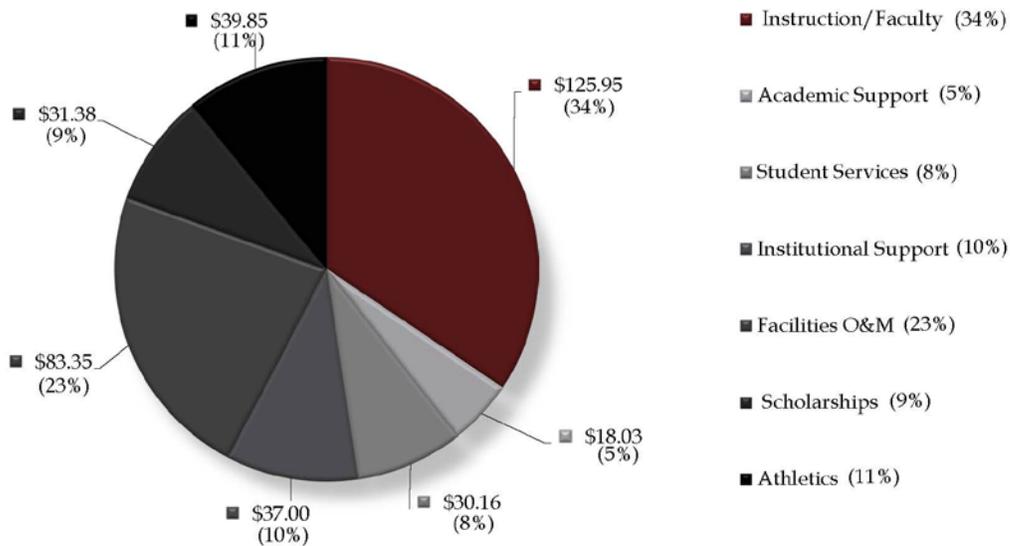
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\$365.72 per SCH**



The Cost/Value Equation

Cost pressures from reductions in public funding are most important for non-selective postsecondary institutions offering standard college coursework. There is some evidence that colleges are charging lower prices for online coursework, suggesting that advances in online learning technology might be able to bend the cost curve in higher education. There are two main caveats to such findings.

First, it is possible that the [quality of education](#) suffers when more content is delivered online. To the extent quality is not compromised at one institution or in a specific program, the [variation in online learning](#) efficacy is subject to a large standard deviation across different suppliers. The same is true for on campus delivery of courses. An initial randomized trial of a college statistics course found no difference in student achievement in online versus in-person course sections, but two other studies found negative impacts of switching from in-person to online instruction on course final grades in an introductory economics class.

Second, the general equilibrium effects of online education may exert competitive pressure on the entire postsecondary education sector, lowering prices and/or increasing efficiency. The rapid growth of online for-profit education during the past two decades and the recent entry of flagship public universities into the sector suggest that the competition for online students in higher education has only just begun.

The purpose of this white paper is to estimate explicit financial differences associated with campus versus online instruction for West Texas A&M University, a mid-sized regional comprehensive public institution located in the Southwest. The institution total enrollment is approximately 10,000 students, which includes a growing online population representing as much as 35% of total annual enrollment.

Services Not Applicable to Online Students

The campus environment offers student support services and enrichment opportunities that may not be [applicable to online](#) learners. These services include a wide range of options, such as utilizing parking/bus services, student union and/or recreational services, and tickets to attend live sporting events. Select services provided by an institution are applicable in both campus and online environments, such as advising services, career services, software license service, and academic document services. Online students rarely complain about paying for services they use, but are often adamant about avoiding payment for services they cannot fully engage.

In a mixed education model that includes campus and online students, it is possible online students are paying for underutilized resources that disproportionately benefit campus students. An example of additional expense items and estimated expense at the representative regional mid-sized public institution is offered below:

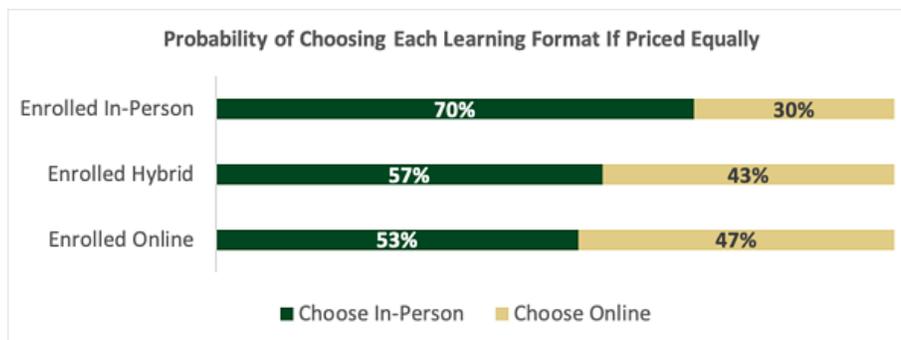
Underutilized Services Currently Paid by Online Students

- Athletic Fee
- Recreational Sports Fee
- Medical Services Fee (Available as telehealth counseling to online students.)
- Bus Operations Fee (Being eliminated or privatized as part of budget reduction plans.)
- Miscellaneous Services including summer registration programs, welcome events, and similar programs that vary greatly from campus to campus. (Billed when used.)

Total Underutilized Expenses = \$354/year per student

(Beginning Fall of 2020, students who are enrolled in online courses only (no campus or satellite campus courses) will have waived the following three fees: Rec Sports, Health, and Athletic. These fees will be replaced by a Distance Education Fee of \$56 per semester credit hour and will be automatically calculated based on a student's enrollment status (online only or traditional/mixed) and without regard to the student's address. Students who are deemed to be online and are not billed these fees will not have free access to the campus medical services, the Activities Center & rec sports programs, or free admission to sporting events.)

One important caveat, while an online student may not use all campus resources – it might be beneficial for an online student to earn a degree from a program that has residential campus services and traits. Importantly, a resume audit experiment found employers are less likely to contact otherwise-identical fictitious job applicants when they have business degrees from online for-profit institutions as compared to degrees from nonselective public institutions.



From: <https://services.intead.com/blog/perceived-value-online-vs-on-campus>

An online student may not want to pay a regional public institution to support an athletic program or similar, related programs, (Often streamed video and or audio to online students) but the value of the degree earned is likely enhanced from the perspective of employers, when an institution provides comprehensive services in contrast to a clear for-profit education provider.

Creating an Online Infrastructure for Quality Delivery – It is not Free

Most online courses include a technology fee, on either a per-credit hour or per-term basis. The fee covers costs such as technology improvements, increased bandwidth with backup so there is never an interruption in service, 24/7 tech support, virtual labs, instructional designer assistance for faculty members, software to prevent plagiarism, test protection software, and online learning management systems; these are all [reoccurring costs](#).

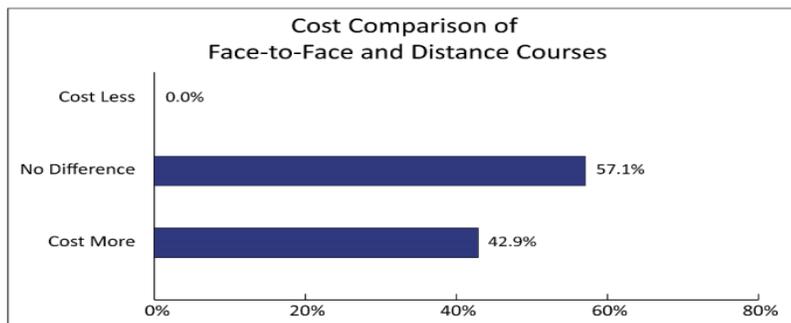
In other words, computer hardware and software have to be maintained, along with training faculty to teach online and having them develop new courses or adapt existing ones. Students need online services, especially if they are never physically on-campus. Faculty still respond to students, monitor projects, grade writing assignments, and give examinations and spend nearly limitless hours in email and text exchanges with students

who communicate 7 days a week nearly 24 hours a day, providing unlimited office hours by virtue of asynchronous availability.

It is a different world.

[Faculty workloads](#) are often the same amount, if not more, when teaching online as compared to face-to-face, and salaries for online faculty are sometimes less, without the benefits of belonging to the on-campus faculty. Oftentimes they are part time or term faculty brought in solely to teach specific subject matter online, but do not have the opportunity to contribute to and be part of the greater university experience. At West Texas A&M University, most online faculty also have on-campus teaching assignments and become a working member of the academic community, with rare exceptions, and build trust relationships with students, on and off-campus, the core of excellent teaching. If anything, the costly technology plus the same cost for faculty means that online instruction is more expensive for a college to offer – so there are not explicit savings to pass on.

In order to offer an equivalent quality educational experience in the online environment, ongoing [technology upgrades](#), limits on class sizes, faculty instructional support, and deployment of appropriate ratios of full-time faculty with terminal degrees are only a few of the important considerations. External ranking entities such as *U.S. News & World Report* and *The Princeton Review* look at the technology, faculty, and student support infrastructure needs and best practice when ranking academic programs. When it comes to faculty and student support needs, much of the expectations for quality online delivery are consistent with on-campus program expectations. The technology required to support [quality online program delivery](#) exceed costs of campus delivery.



From: [Online Education Costs More, Not Less](#)

In a mixed education model that includes campus and online students, it is possible online students are not paying the full expense associated with technology upgrades, as campus students bear a disproportionate percent of the burden relative to use. An example of additional expense items and estimated expense at the regional mid-sized public institution is offered below:

Ongoing Technology Infrastructure Upgrades Consistent with Best Practices in Online Delivery

- Learning Management Systems (The ecosystem of platforms for online delivery.)
- Student Information Systems
- Information and Cybersecurity
- Data Backups
- Instructional Design and Related Personnel
- Internet Services
- Data Center and Infrastructure
- Hardware Replacement

Total Upgrade Savings by Online Students = \$366/year per student

Implicit Student Savings with Online Delivery

Traditional colleges come with a certain kind of experience: a student union filled with students, dorms and dining halls, academic buildings filled with faculty offices and classrooms, and sports teams to cheer. All of these amenities are much appreciated by students, and often enhance the overall college experience. For traditional-aged college students – those between the ages of 18 and 22, this on-ground college experience is the one they have in mind, and one they will benefit greatly from. These younger students often need and thrive as a result of, the structures and support in place in these environments that help guide them through their time at an institution. Offering these programs, operating buildings, providing housing and food for a large student body, and maintaining the onsite staff needed to support students is usually an additional expense beyond standard tuition and fees. While there might not be explicit total savings in tuition and fees in the online environment versus the campus alternative, there is a clear opportunity to implicit savings. An example of implicit savings opportunities includes the following with this caveat: As economies of scale decrease through lower subscription, costs per student will likely increase.

- Housing – Traditional campus programs often require students to pay for housing whereas online students can save money by living at home.
- Food – Students who live on-campus usually have to pay for food upfront with a meal plan. Off-campus students have the opportunity to save money on meal costs if living at home.
- Course Materials – Online programs often provide class material or employ eTextbooks in many cases replacing the need for physical textbooks. (Digital textbooks and other reduced cost instructional support systems for students are also being implemented for on-campus settings.)
- Transportation Costs – Although not necessarily a required expense for traditional campus programs, online students do not need to pay for gas or related transportation expenses in order to travel to a physical classroom.

Food and housing are the most obvious expenses associated with campus life, which could generate substantial savings differential for online [students living at home](#). The amount of savings will drastically differ by institution and location across the U.S., but the estimate for

West Texas A&M University, as a regional mid-sized public institution in our sample approaches \$10,000 per year in implicit housing, food, and transportation savings. For the sample institution, the \$10,000 a year in implicit savings represents a 30% to 50% reduction in total annual outlay. This savings accrues to the student and not the institution.

Cost to Students

While instructional costs to students as noted above will remain essentially similar for on-campus and online students, living costs, the ability to sustain current employment, the lack of transportation requirements to and from school, and other non-instructional costs for students will decrease. (See above) While it can be argued that students will still pay for room and board and other general costs for living when off-campus, there are ways to economize those that go beyond what is possible on-campus. As a simple example if the student lives at home they may not be required to pay for meals or a place to sleep. Additionally, online textbook costs are typically nonexistent or lower. No savings to the university but the student can save significantly.

West Texas A&M University's goal is to keep the on-campus enrollment constant at 7,500 students leading to no appreciable changes in the room and board populations/revenues. Students accrue a savings at no cost to the university. Access potential increases dramatically as on-campus living expenses are eliminated for online students. In addition, we can significantly increase the number of students we serve through effective, high academic quality, synchronous and asynchronous offerings of online degree programs.

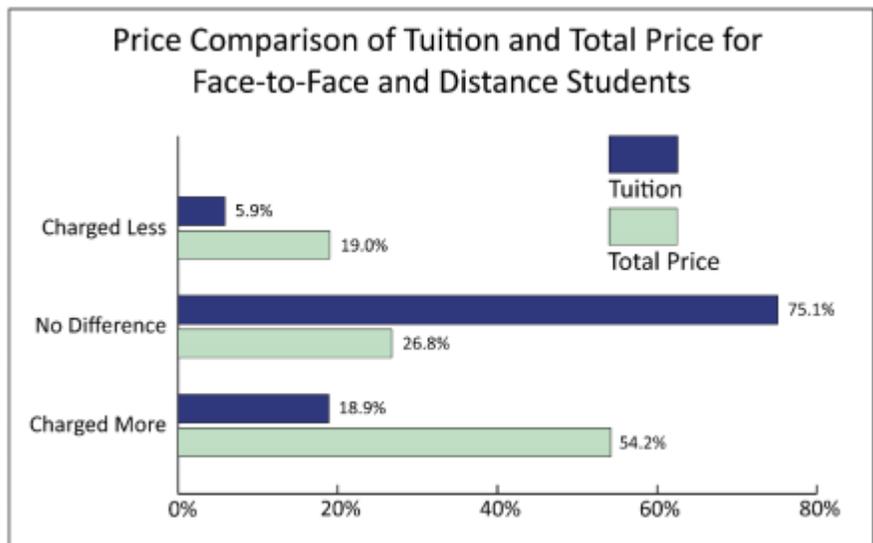
An additional benefit in online offerings is that [campuses become greener](#) due to reduced commuting, energy consumption, and other environmental impacts.

Coupled with reduced costs, sustainability, and access to higher educational opportunities for working students, as well as members of the [Armed Forces](#) who are concurrently enlisted are all important aspects of our efforts to create more online programs requiring no additional instructional space.

On-Campus Space Utilization

Physical facilities requirements for on-campus and online instruction differ. Classroom spaces are reduced when seat spaces per student are reduced. Return to campus in the fall semester, post COVID-19, on-campus populations in classrooms will be reduced by 50% in order to allow appropriate social distancing. Students not present in class will access lectures through [lecture capture technology](#) and by posting those lectures to all students for asynchronous access. This will eliminate the number of seat spaces required to accommodate a nearly 100% increase in students studying online, and thereby reduce new construction costs for traditional classroom spaces. Without the crisis of COVID-19 it would appear that we would require one half of the space if our student population was to double, however, all of the growth would be in online students.

That is the plan of West Texas A&M University. Our current on-campus enrollment is approximately 7,500 students. Our goal is to grow our total enrollment to 15,000 students, but maintain our current on-campus population of 7,500 students. This allows us to affect a number of important milestones for our pedagogical philosophy.



From: [Online Education Costs More, Not Less](#)

To reiterate what is noted above:

First, all faculty who teach online must also teach on-campus. The issue of quality is addressed below, but to discuss space is imperative to understand the similarities between commitments of high-quality faculty, and teaching excellence, whether students are on-campus or online.

Second, first-rate online instruction requires information technology support that goes beyond traditional classroom requirements. Lecture capture, content preparation, delivery techniques, and other aspects of online instruction require appropriately supported studio and recording spaces on-campus. While the requirements for the traditional classroom spaces may be significantly less regarding gross square footage, building sophistication, information technology infrastructure, and training and support spaces, all require new specialized space on-campus.

Third, spaces for course design and development, spaces that complement the online experience and spaces for blended courses, and additional spaces for supporting students are identified in a comprehensive study by [Elliott Felix](#).

At West Texas A&M University a significant ramp-up for accommodating online students is in the planning stages, our existing on-campus classroom spaces will be adequate for current undergraduate teaching. Graduate instruction has different space requirements than those needed for undergraduate instruction to accommodate seminars, laboratories and other specialized graduate study settings.

Quality of Instruction and Impact on Learning

Quality of instruction and learning opportunity cannot be equated with modality of delivery. The art of good teaching is little affected whether or not that teaching occurs face-to-face or online. [Good teaching](#) requires a bond of trust between the student and the institution worked out through the faculty. Moreover, it would be unfortunate to compare [new modality teaching](#), such as what occurred during the COVID-19 pandemic with three decades of practice and development of online instruction ubiquitous in all effective online programs. The challenge of utilizing professionally developed teaching content, created by internationally recognized experts (the MOOC model), delivered through graduate students, or detached instructors who are merely caretakers, does not provide the contact that is fundamental to the essence of good teaching. Robert Audi in an article in *Academe* September-October 1994 entitled, "[On the Ethics of Teaching and the Ideals of Learning](#)" suggests four models of teaching: didactic, apprentice, collegial, and friendship. These models are not inherently impacted by teaching modality.

Ohio State University is home to some of the best online bachelor's programs in the nation. [Faculty members](#) who teach online have an average of eight years of online practice and meaningful experience. The quality of the instruction is recognized by students who value the fundamentals of teaching excellence. Practice, may not make perfect, but it goes a long way towards that goal.

[The Conversation](#) identifies five reasons that online instruction may actually be better: accessibility, personalization, clarity, flexibility, and independence. The automatic assumption by many educational leaders, administrators, and faculty is that online education cannot be as good as face-to-face. This is an unfortunate predisposition. Good teaching is good teaching. Whether it's done with chalk on slate, or digitized on an iPad.

The [best online teaching](#) is energized by the realization that this is not a modification to face-to-face instruction. Both modalities are guided by the purposeful ideal of turning ignorance into insight for students. Faculty in both settings dedicate countless hours to preparation and communication. Modality diminishes neither.

The point of view held that online courses will be cheaper because they can be randomly mass-produced and distributed, is ill-founded. MOOC's have [fallen short](#) of expectations for this particular lack of insight regarding the ultimate value of personal communication. Subscriptions to such courses have not changed significantly in many years. The business [model was flawed](#) as it was founded on the idea that the personal relationship between the motivating intellectual force, the teacher, and the receiver, the student, was not essential. Whether online or face-to-face, that connection is what creates excellence.

Lastly, informed scholars of teaching and learning believe [that online instruction](#) will make face-to-face more effective and of higher quality.

Thoughtful Hybrid models of teaching and learning will both economize and improve teaching quality, while improving access for many students.

Summary

While the costs and benefits of on-campus versus online instruction can be deliberated at length, it is clear from the preceding observations that the two are nearly equal when the quality of instruction offered by a midsized regional University, such as West Texas A&M University in Canyon, Texas. The assumption that all online courses are cheaper may be true in many settings but is not true in our experience, especially for undergraduate students who seek a bachelor's degree. The great benefit of online instruction is the asynchronous nature of it, which allows working parents, veterans, and other "nontraditional" students to have access to a first quality undergraduate education. Nights and weekends can be used as they were after World War II, for educational opportunity that served working people. That is our commitment at West Texas A&M University, but only when quality of instruction through human interaction between faculty and student is held in the highest regard.

To reiterate, while the costs are nearly the same, the reduction in access to on-campus college experiences for the traditional residential students is essentially offset by increased information technology support required for effective online instruction.

Underutilized Services Paid by Online Students ***Technology Infrastructure Upgrades Consistent with Best Practices in Online Delivery***

- Athletic Fee
- Recreational Sports Fee
- Medical Services Fee
- Parking Services Fee
- Bus Operations Fee
- Miscellaneous Services

***Total Underutilized Expenses =
\$354/year per student***

- LMS Ecosystem
- Student Information Systems
- Information and Cybersecurity
- Data Backups
- Instructional Design and Related Personnel
- Internet Services
- Data Center and Infrastructure
- Hardware Replacement

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References

Audi, R. (1994). On the Ethics of Teaching and the Ideals of Learning. *Academe*, 80(5), 27-36. doi:10.2307/40250664

Baum, S., & McPherson, M. (2019). The Human Factor: The Promise & Limits of Online Education. *Daedalus*, 148(4), 235–254. https://doi.org/10.1162/daed_a_01769

Baum, Sandy, Charles Kurose, and Michael McPherson. 2013. "An Overview of American Higher Education." *The Future of Children* 23 (1): 17–39.

Baum, Sandy, and Jennifer Ma. 2014. *Trends in College Pricing*. Princeton, NJ: The College Board.

Bowen, William G. 2012. "The 'Cost Disease' in Higher Education: Is Technology the Answer?" Lectures presented at the Tanner Lectures on Human Values at Stanford University, Stanford, CA.

Bowen, William G., Matthew M. Chingos, Kelly A. Lack, and Thomas I. Nygren. 2014. "Interactive Learning Online at Public Universities: Evidence from a Six-Campus Randomized Trial." *Journal of Policy Analysis and Management* 33 (1): 94–111.

Calculating the True Cost of an Online Program. (2020, March 30). Retrieved from <https://www.bestcolleges.com/resources/online-students/true-program-cost/>

Christensen, Clayton M., and Henry J. Eyring. 2011. *The Innovative University: Changing the DNA of Higher Education from the Inside Out*. San Francisco: Jossey-Bass.

Couch, Kenneth, Oskar R. Harmon, and William Alpert. 2014. "Online, Blended and Classroom Teaching of Economics Principles: A Randomized Experiment." Paper presented at the Committee on Economic Education Conference on Teaching and Research in Economic Education, Washington, DC.

Cowen, Tyler, and Alex Tabarrok. 2014. "The Industrial Organization of Online Education." *American Economic Review* 104 (5): 519–22.

Deming, David J., Claudia Goldin, Lawrence F. Katz, and Noam Yuchtman. 2015. "Can Online Learning Bend the Higher Education Cost Curve?" *American Economic Review* 105 (5): 496–501.

Deming, D., Goldin, C., Katz, L., & Yuchtman, N. (2015, January 22). Can Online Learning Bend the Higher Education Cost Curve? Retrieved from <https://www.nber.org/papers/w20890>

DeVaney, J., Shimshon, G., Rascoff, M., & Maggioncalda, J. (2020, May 05). Higher Ed Needs a Long-Term Plan for Virtual Learning. Retrieved from <https://hbr.org/2020/05/higher-ed-needs-a-long-term-plan-for-virtual-learning>

D'Orio, W. (2019, April 17). Colleges rethink student services for online learners. Retrieved from <https://www.educationdive.com/news/its-sunday-evening-where-are-online-colleges-student-services/552911/>

Downs, L. (2017, April 11). Distance Ed Costs and Price: Not as Closely Correlated as You'd Think. Retrieved from <https://wcetfrontiers.org/2017/02/16/distance-ed-price-and-cost/>

Fain, P. (2019, January 16). Inside Higher Ed. Retrieved from <https://www.insidehighered.com/digital-learning/article/2019/01/16/online-learning-fails-deliver-finds-report-aimed-discouraging>

Felix, E. (2019, August 07). Growth of Online Learning in Higher Education: Space Design. Retrieved from <https://www.brightspotstrategy.com/online-learning-higher-education-space-design/>

Gannon, K. (2019, March 25). 4 Lessons From Moving a Face-to-Face Course Online. Retrieved from <https://community.chronicle.com/news/2176-4-lessons-from-moving-a-face-to-face-course-online>

Gewin, V. (2020, March 24). Five tips for moving teaching online as COVID-19 takes hold. Retrieved from <https://www.nature.com/articles/d41586-020-00896-7>

Goguen, B. (2020, April 22). How Online Education Makes Campuses Greener. Retrieved from <http://blog.online.colostate.edu/blog/online-education/how-online-education-makes-schools-greener/>

Goldin, Claudia, and Lawrence F. Katz. 2008. *The Race between Education and Technology*. Cambridge, MA: Belknap Press of Harvard University.

Grand Valley State University. (n.d.). Retrieved from <https://www.gvsu.edu/online/technology-requirements-for-onlinehybrid-courses-8.htm>

Groen, J. F., Quigley, B., & Herry, Y. (2016). Examining the Use of Lecture Capture Technology: Implications for Teaching and Learning. *The Canadian Journal for the*

Scholarship of Teaching and Learning, 7(1), 1–18. <https://doi.org/10.5206/cjsotl-rcacea.2016.1.8>

Hodges, C., Moore, S., Lockee, B., Trust, T., & Bond, A. (2020, March 27). The Difference Between Emergency Remote Teaching and Online Learning. Retrieved from <https://er.educause.edu/articles/2020/3/the-difference-between-emergency-remote-teaching-and-online-learning>

How does Online Instruction Measure Up to Face-to-Face? (Focus EduVation). (n.d.). Retrieved from <https://www.focuseduvation.com/how-does-online-instruction-measure-up-to-face-to-face/>

Hoxby, Caroline M. 2014. "The Economics of Online Postsecondary Education: MOOCs."

Is college still worth it? (2018, July 9). Retrieved from <https://fredblog.stlouisfed.org/2018/07/is-college-still-worth-it/>

Joyce, Theodore J., Sean Crockett, David A. Jaeger, Onur Altindag, and Stephen D. O'Connell. 2014. "Does Classroom Time Matter? A Randomized Field Experiment of Hybrid and Traditional Lecture Formats in Economics." National Bureau of Economic Research Working Paper 20006.

Kuchar, K. (2019, November 13). Should You Live at Home to Save Money During College? Retrieved from <https://www.thesimpledollar.com/investing/college/should-you-live-at-home-to-save-money-during-college/>

Lederman, D. (2019, January 16). Inside Higher Ed. Retrieved from <https://www.insidehighered.com/digital-learning/article/2019/01/16/study-offers-data-show-moocs-didnt-achieve-their-goals>

Lee, K. (2020, May 29). Five ways online university learning can be better than face-to-face teaching. Retrieved from <https://theconversation.com/five-ways-online-university-learning-can-be-better-than-face-to-face-teaching-139127>

Leonard, W. (2019, February 08). So why did MOOCs fail to live up to the hype? Retrieved from <https://www.universityworldnews.com/post.php?story=20190207110446568>

Lowrey, A. (2020, January 09). The College Wealth Premium Has Collapsed. Retrieved from <https://www.theatlantic.com/ideas/archive/2020/01/college-wealth-premium-collapsed/604579/>

Mitchell, M., Leachman, M., & Masterson, K. (2017, August 23). A Lost Decade in Higher Education Funding. Retrieved from <https://www.cbpp.org/research/state-budget-and-tax/a-lost-decade-in-higher-education-funding>

Nonselective Education, and Highly Selective Education." *American Economic Review* 104 (5): 528–33.

The NCES Fast Facts Tool provides quick answers to many education questions (National Center for Education Statistics). (n.d.). Retrieved from <https://nces.ed.gov/fastfacts/display.asp?id=76>

Rodgers, M. L. (n.d.). Can Online Teaching Improve Face to Face Instruction? Retrieved from <https://tomprof.stanford.edu/posting/1321>

Stebbins, S. (2020, June 26). College Majors With the Lowest Unemployment. Retrieved from <https://247wallst.com/special-report/2020/06/26/college-majors-with-the-lowest-unemployment-3/>

Straumsheim, C. (2017, February 17). Study challenges cost and price myths of online education. Retrieved from <https://www.insidehighered.com/news/2017/02/17/study-challenges-cost-and-price-myths-online-education>

Waxman, B. (2020, June 17). Perceived Value: Online vs. On Campus. Retrieved from <https://services.intead.com/blog/perceived-value-online-vs-on-campus>

Wendler, W. (2010, August 27). Our University – Teaching Excellence. Retrieved from <http://walterwendler.com/2010/08/our-university-%E2%80%93-teaching-excellence/>

Glossary Index

Statutory Tuition - Statutory tuition rates are set by the Texas Legislature

Designated Tuition - Designated tuition rates are set by the University, and revenue generated is utilized for operations of the University, state-mandated set-asides for need-based scholarships, and building upkeep and improvement. Designated tuition is charged per semester credit hour up to 12 hours, is a fixed amount for 12 to 18 hours, and is charged per semester credit hours for hours above 18 per term

University Services Fee - Assessed per semester credit hour; these fees are used to support the operations of the following programs/services: Student Advising Services, international education, library, records, technology, traffic and safety, transportation, and Washington, D.C. interns

Declared Major Enhancement Fees - A flat fee assigned for specific majors

Undergraduate Academic Enhancement Fee - Assessed per semester credit hour to undergraduate students who do not already have differential tuition or other enhancement fees assigned

Health Fee - A flat fee per semester for the operation of Student Medical Services, an on campus medical clinic open to students during semesters the student is enrolled

Student Service Fee - Assessed per semester credit hour for all enrolled students; these fees are distributed by the Campus Student Fee Committee for various campus services and organizations

Student Center Complex Fee - Assessed per semester credit hour, this fee is used for operation and maintenance of student centers across both the Canyon and Amarillo campuses for all learning spaces such as classrooms, lecture rooms, social centers, and research areas

Rec Sports Fee - A flat fee per semester used to help to finance, construct, operate, maintain and improve recreational sports facilities and programs open to all enrolled students who are not members of competing NCAA teams in specified sports.

(Intercollegiate) Athletic Fee - A fee distributed by the University for debt service on the recreational/sports complex and by the Athletic Director for all Intercollegiate Athletic activities and scholarships recognized by the NCAA. This fee also allows students free admission to all regular season home games with a valid Buff Gold card

International Insurance Premium - Assessed by the Texas A&M System to all international students so that they can utilize local medical facilities outside of West Texas A&M University in the event of a serious medical situation

International Student Fee - A fee assessed by the International Student Office at West Texas A&M University to support the funding of assisting students with visa and immigration documents

Distance Education Fee - A fee per semester credit hour assessed to students who are online only and who are not billed the health, rec sports, or athletic fees