Chapter 19

Arizona State University: A Learning Enterprise Supporting P-12 Education in the COVID-19 Pandemic

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Abstract Although no one was fully prepared for a pandemic in 2020, Arizona State University was ready and able to respond. As the COVID-19 virus began to spread across the world, ASU began moving university students to remote learning environments. As K-12 schools began to close across the nation, ASU disseminated elementary- and secondary-level educational resources and created hybrid learning opportunities for students of all ages.

Three distinct categories of action defined the university's response to COVID-19:

- Direct provision of education to P-12 learners
- Provision of human and intellectual capital (people and ideas) to P-12 schools
- Curation and provision of free educational resources to learners, families, and schools

Many of the existing long-term commitments being pursued by various ASU units had helped the university develop capabilities that could immediately be applied to help elementary and secondary learners and the education professionals serving them during the pandemic. Some of the immediate responses accelerated the university's efforts to pursue long-term actions that could help both schools and P-12 students and families integrate remote learning and instruction into effective education models.

ASU responded rapidly to the educational challenges COVID-19 presented because the university had a high degree of institutional readiness in at least three key areas of operational excellence and organizational culture:

- A core set of preexisting commitments and functional capabilities in the area of technology-enhanced instruction
- Strong existing partnerships with P-12 schools
- An institutional vision to universal learning that demands a university be ready and able to deliver instruction to all learners across many modalities

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This chapter only represents a moment in time, the beginning of the pandemic, and the actions taken to support and ameliorate consequences. Since this time, much has happened.

19.1 About ASU

Arizona State University (ASU) has developed a model for the New American University by creating an institution that is committed to excellence, access, and impact. Through the New American University model, ASU educates more than 120,000 students each year and supports a larger student body than any other university in the United States that operates under a single institutional administration.

The university is demonstrating that access and high academic quality can happen together.

- While increasing enrollment by 49.8% since 2002, ASU achieved the #17 research expenditure ranking among 768 US universities without medical schools.
- US News and World Report named ASU the #1 university for innovation in 2016, 2017, 2018, and again in 2019.

ASU is proud of their students and their ability to complete their university education against often difficult odds.

- Eight-five percent of ASU undergraduate students receive some level of financial assistance; among the highest percentage of any top-tier university in the United States.
- Thirty-six percent of ASU undergraduate students receive Pell Grants, the most diverse class ever
- Forty-six percent of ASU's incoming first-year students in fall 2019 came from minority backgrounds, which reflects ASU's commitment to higher education access
- Twenty-seven percent of ASU's student body is first-generation college students
- ASU ranks no. 1 among the state's public universities for its 87.8% first-year students retention rate (<https://www.asu.edu/about/facts-and-figures>).

The charter ASU adopted in 2014 serves as a succinct expression of the university's purpose:

ASU is a comprehensive public research university, measured not by whom it excludes, but by whom it includes and how they succeed; advancing research and discovery of public value; and assuming fundamental responsibility for the economic, social, cultural, and overall health of the communities it serves.

ASU is strategically implementing the academic enterprise, which is the core of the institution providing programs and degrees across a wide swath of disciplines; the knowledge enterprise, which advances research, innovation, strategic

partnerships, entrepreneurship, and international development; and the learning enterprise, which fosters universal access to social and economic opportunity by creating new pathways to learning that are accessible at every stage of a learner's life. As part of its commitment to innovation, ASU empowers its units to make strategic and operational decisions in line with its charter.

19.2 Immediate Response

The following units played key roles in ASU's university-wide response to the educational challenges presented by the COVID-19 pandemic:

ASU Preparatory Academy (ASU Prep) is a tuition-free college preparatory school that serves students in grades K–12. ASU Prep is chartered by ASU and is a Cambridge Curriculum school focused on critical thinking skills and deep learning experiences. P-12 schools have a mission to personalize education and improve outcomes for all students.

ASU Prep Digital (ASUPD) is an accredited online school where learners can take a single online course or enroll in a full-time, diploma-granting program. ASU Prep Digital offers an accelerated path toward college admission and the chance to earn concurrent high school and university credit. ASUPD provides high-quality P-12 learning experiences designed to improve student outcomes at scale. Since its inaugural year in 2017, ASUPD has grown from 1500 enrollments to 22,000 in 2019–2020.

The Gary K. Herberger Young Scholars Academy (HYSA) is a learning environment designed for highly gifted students in grades 7–12 located on the Arizona State University West campus. Funded in part by an endowment from the Herberger Family and supported by ASU, the Gary K. Herberger Young Scholars Academy was founded to address the needs of academically and intellectually gifted students in the Phoenix area.

ASU's Mary Lou Fulton Teachers College (MLFTC) is one of the few colleges of education in the United States that excels at both teacher preparation and world-class scholarly research. MLFTC is ranked #13 in US News & World Report's annual rankings of America's graduate schools of education. In line with the ASU charter, MLFTC is committed to building and supporting the Next Education Workforce. To that end, the college works with schools and other partners to (1) provide all students with deeper and personalized learning by building teams of educators with distributed expertise and (2) empower educators by developing new opportunities for role-based specialization and advancement.

Many other units participated as well, by expanding offerings or creating new avenues to engage with state-of-the-art technologies in artificial intelligence, adaptive learning, and interactive platforms. All these units recognized the need to step up during a difficult year and took action to support P-12 education.

19.2.1 Direct Provision of Education to P-12 Learners

Following the onset of the pandemic, ASU directly served thousands of K-12 students across the state of Arizona in collaboration with ASU Prep, ASUPD, and HYSA. The physical brick-and-mortar schools of ASU Prep and HYSA transitioned more than 3,000 elementary and secondary learners from 12 physical sites to remote learning within one week. ASU Prep Digital (ASUPD), which regularly facilitates transitions to blended learning with local schools, provided leadership and support while still supporting more than 10,000 learners who were already taking advantage of online learning opportunities through ASUPD.

The ASU Prep academies surveyed families and ensured that hardware and internet access were covered. They also surveyed staff needs, set up training, and managed the physical transition. The ASUPD team provided the digital and technical infrastructure, training, ongoing coaching, and intensive internal and external support. Both teams also offered all-day help sessions in an “open house” format in Zoom rooms where parents and students could pop in anytime with questions. As a result of these efforts, attendance for site-based students at ASU Prep during the remaining nine weeks of school remained at 89%.

ASUPD was able to scale and or adapt three existing initiatives to support schools locally and nationally during the disruptions caused by the pandemic:

Initiative 1: Digital Suite of Remote Learning Resources

At the onset of school closures, ASU responded immediately by launching a robust suite of free online educational resources to support the transition to remote learning for learners and educators nationally. This platform, called [ASU for You](#), includes online student tutoring sessions, access to ASUPD core course materials, a library of training videos to help teachers and parents transition, and full technology and remote teaching support for schools. The platform provides consistency across schools and empowers teachers with tools that augment their current distance learning plans, providing metrics and assessments to inform decision-making.

Initiative 2: ASU Prep Digital Online Teacher Corps Training

ASUPD quickly responded to teacher training needs through ASUPD’s Online Teacher Corps five-day intensive training. Equipping teachers to operate within the agile and nimble nature of online learning environments, this training ensured students had a seamless transition between on-site and online classrooms. Thinking in the long term, educators could also use their new skills to implement blended learning as an ongoing strategy to personalize learning. Additionally, with a workforce trained in e-learning practices, schools could drastically abbreviate or eliminate short- or long-term education interruptions when future closures were required. The training enabled educators to reimagine instructional design and delivery, consider new teaching roles and methods, explore new school and learning models, and understand how to manage blended or remote environments effectively.

Agenda topics included:

- Online curriculum
- Learning management system
- Best practices in online instruction
- Setting up a virtual instruction plan
- Web 2.0 tools (web conferencing, plagiarism detection, etc.)
- Live lessons
- Pace charts
- Setting up a home page
- Supporting students with special needs
- Creating supplemental resources and customizations
- Academic integrity and discussion-based assessments
- Preparing for “go live” with students
- Best practices for effective communication
- Monitoring student progress
- Building social presence
- Social and emotional learning in an online environment
- Teaching time and stress management

Very quickly, 583 teachers were trained, impacting approximately 49,505 P-12 students. Of these teachers:

- 75% were from rural districts, and 84 teachers represented tribal communities, including the Hopi, Navajo, and San Carlos Apache reservations.
- There were 31 school districts and 80 unique schools represented. ASUPD provided training for 43 elementary schools with 246 elementary teachers, five middle schools with 47 middle school teachers, and 32 high schools with 290 high school teachers.
- Two more training sessions are scheduled, with approximately 1000 teachers participating before July 2020.
- Additionally, ASUPD trained 800 teachers from Hawaii, Kamehameha Schools, which serves 5600 students. Training also took place in Utah, reaching 2500 students.

Initiative 3: *Free Digital Summer School Opportunities for All Arizona Learners*

To promote continued learning in the summer, the State of Arizona funded several ASUPD summer school programs, which enabled Arizona students to enroll at no cost. These included ASUPD online high school summer school courses that offered supplemental math programs to improve foundational knowledge and fill in gaps for P-12 students and a choice of one tuition-free university course that can count toward high school and college credit. Early in the pandemic, ASUPD saw an 800% increase in demand for summer school enrollment. For comparison, in 2019, ASUPD had 283 students enrolled in summer school, and in 2020, that number grew to 2,602 students. Fundraising efforts for initiatives continued as ASUPD sought support from both foundations and individual donors. ASUPD operates at cost-neutral in most instances.

19.2.2 Provision of Human and Intellectual Capital in P-12 schools

When the spring 2020 semester started, ASU's Mary Lou Fulton Teachers College had 646 teacher candidates working full-time in schools as residents. By mid-March, MLFTC had five days to develop an actionable plan to (1) keep its students safe, (2) provide those students with meaningful clinical experiences that would allow them to graduate on time and earn the college's institutional recommendation for teacher certification, and (3) create something that would be valuable to school and district partners and to the P-12 learners they serve.

ASU's Mary Lou Fulton Teachers College (MLFTC) developed Sun Devil Learning Labs, which served as an online platform that allowed the college's teacher candidates to complete their clinical experience requirements while providing online instruction to elementary school students. In six days, the college built, tested, and launched a new platform. Through this platform, ASU teacher candidates delivered live streaming lessons, with supervision and coaching from ASU faculty, four days a week, to P-8 students. ASU students developed these lessons and then conducted them on the Zoom teleconferencing platform while end-users viewed those lessons live on YouTube channels organized by grade level.

The Sun Devil Learning Labs platform successfully fulfilled its primary purpose: providing MLFTC students experience in designing and delivering remote instruction. It also saw some success in realizing its secondary purpose: engaging P-8 learners while their schools were closed. MLFTC briefly stopped creating new content for Sun Devil Learning Labs after the school year concluded, but it relaunched in June, partnering with one school district to provide summer learning for that district's students to combat summer learning loss. The platform had over 15,000 lesson views in a month.

For three years, MLFTC has been working with partner districts to design and field [Next Education Workforce](#) models that seek to provide all students with deeper and personalized learning by building teams of educators with distributed expertise and empower educators by developing new opportunities for role-based specialization and advancement. The college's work on the Next Education Workforce has recast a problem commonly called a "teacher shortage" as a workforce design challenge. Unlike roles in nearly every other profession, the job of a teacher is undifferentiated. A teacher's first day on the job looks remarkably similar to the 3000th day. Society asks teachers to be experts in too many topics, which makes the job untenable and drives many talented individuals from the profession. As a result, our education system does not reliably deliver quality learning outcomes or experiences. The Next Education Workforce initiative starts from the conviction that if we are not getting the workforce or the learning outcomes we want, we need to redesign the profession, the workplace, and how we prepare people for both. The Next Education Workforce will include community educators—people who can complement professional educators and support students by working as technicians, content experts, and applied learning specialists.

COVID-19 is likely to accelerate teacher retirements and cause long-term absences. It is also likely to accelerate the pace at which schools must integrate technology and remote learning. Accordingly, MLFTC accelerated its efforts to develop resources to train community educators. MLFTC developed concise, targeted micro courses, and each micro course provides on-demand training that is easy to navigate, understand, and requires less than 20 min to complete. Training includes universal skills for the classroom (e.g., how to give feedback to students) and cover specific subjects (e.g., strategies for reading aloud to young children).

In the future, pandemic or not, some or all learners will likely be remote at different periods of time. Sometimes, the instructors or content experts will be remote, and at other times, perhaps, everybody will be somewhere other than school. Regardless of the setting, learning must happen. The innovations in remote learning and instruction that we developed early in the pandemic will have long-term benefits for how we bring expertise into rural schools and other communities that are not fully staffed with the pedagogical and content expertise their learners need.

19.2.3 Provision of Educational Resources to Learners, Families, and Schools

ASU rapidly curated a wealth of resources developed across the university and made them available online, for free, to the public on a web-based platform called [ASU for You](#).

ASU had long planned to launch ASU for You, but the COVID-19 pandemic shaped how ASU launched the platform which has an increased focus on health and education content. The education content included the following:

- *Education resources curated by MLFTC.* Faculty and staff curated resources for educators, families, and education leaders to adapt to remote learning. These tools support a multitude of audiences as they respond to the educational socio-emotional challenges caused by the COVID-19 pandemic. The MLFTC community resources page on ASU for You had over 18,000 views.
- ASUPD offered its services through the ASU for You platform and adapted them specifically to the pandemic.
- *Fulton Virtual Summer Academy.* ASU's Fulton Schools of Engineering operates online STEM camps. Designed for students in grades 1–12, the camps feature age-appropriate engineering design challenges and activities that allow students to explore coding, circuits, computer-aided design, entrepreneurship, engineering design, and more.
- *Miacademy Learning Channel.* Miacademy offers hundreds of original lesson videos across every K–8 content area, including language arts, math, science, and history, extending into art, music, and foreign language learning.
- *Arizona PBS LearningMedia and PBS Kids.* They offered videos, interactive lessons, games, and other content for P-12 learners that align with school curricu-

lum standards. With a focus on early childhood education, these guides from Arizona PBS and other sources include dedicated help sections for parents, caregivers, and teachers.

- *Virtual Field Trips*. Used in high school and college classrooms, these interactive and educational “Virtual Field Trips” feature topic-based, interactive experiences that capture real expeditions and scientists doing research. Many of these experiences also respond to your real-time feedback.
- *Ask a Biologist*. Whether it is for school, at home, or just for personal interest, Ask a Biologist introduces viewers to fascinating topics about what makes the living world work the way it does, from microbes to mammals. Ask a Biologist offers articles, experiments, and VR tours and tap the expertise of professional biologists to answer questions.
- *Cultural Innovation Tools*. These are tools used by artists, designers, and other creatives to adapt their process to these challenging times. Online resources—including exhibitions, performances, educational tools, stories from artists, and more—allow users to continue to create, collaborate, and educate in the arts.
- *Sustainability Teachers Resources*. These engaging activities introduce students to central themes in sustainability science. While designed for grades 6–9, activities can be easily modified for most students and align with Next Generation Science Standards and Common Core science, language arts, mathematics, and history/social studies where appropriate.
- *Infiniscope*. Infiniscope uses simulations and virtual field trips to help educators engage learners in a whole new way. If you work to deliver education, you can make connections here that help you build adaptive, exciting learning experiences for your students.
- *SciStarter*. Through citizen science projects, you can help scientists answer questions they cannot answer alone. Share observations, analyze data, and play online games to advance important research from astronomy to zoology. Just join a project, track your contributions, and earn a certificate for completing the online tutorial.

19.3 Elements of Institutional Readiness

19.3.1 *A Core Set of Preexisting Commitments and Functional Capabilities in the Area of Technology-Enhanced Instruction*

ASU’s commitment to educational access is built on the understanding that digital and remote instruction should be part of any comprehensive educational ecosystem. ASU Prep Digital had existing expertise and scalability in delivering digital

instruction for P-12 learners that could be adapted, in short order, to address specific and immediate needs raised by the physical closure of schools to prevent the spread of COVID-19. ASUPD's resources in course content, training, and summer school content were leveraged and adapted for immediate needs related to school interruptions. The rapid growth of ASUPD's Online Teacher Corps Training and free digital summer school is a testament to ASU's firm commitment to broaden access to quality education, to the passion and expertise of the ASUPD team, which digital learning space veterans lead, and to market demand increases. Over the last three years, ASUPD has carefully created a robust suite of resources, tools, training, and content to support families and schools in accessing quality digital learning.

MLFTC had existing expertise in remote instruction at the college level due to the recent growth of its online undergraduate and graduate degree programs. While MLFTC's online degree programs do not currently lead to teacher certification, the college's faculty and staff had significant technological and pedagogical skills that could be applied, on short notice, to the challenges raised by the pandemic. In addition, because of its extensive online degree-program portfolio, MLFTC houses an Office of Digital Learning (OoDL), which provided extensive technical and pedagogical support to college faculty and the team that designed and executed Sun Devil Learning Labs.

19.3.2 Strong Existing Partnerships with P-12 Schools

ASU has longstanding, deep partnerships with P-12 schools. ASU is the largest producer of certified teachers in the state of Arizona, and one of the largest in the US. MLFTC has more than 1000 enrolled students conducting professional internships and residencies in schools at any given point in a school year. Because of the breadth and depth of those relationships, schools were ready to refer families to Sun Devil Learning Labs. Additionally, as fall 2020 approached, those partnerships serve as a strong foundation as MLFTC works with schools and districts to design professional and clinical experiences that meet the needs of both ASU teacher candidates and P-12 students in an uncertain learning environment.

The range of services ASUPD provides to schools made it a natural partner for schools to turn to in a time of crisis when they needed to acquire and implement forms of digital and remote instruction quickly. Additionally, ASU Prep Digital has been offering college-prep courses to high school students and was a trusted, known provider of quality digital learning experiences. The relationship network developed before COVID-19 relies on partner feedback and outcomes for designing and improving educational services. The sudden onset of the pandemic required swift solutions for our P-12 partners. Leveraging the experience of many university teams and soliciting input from local education and civic leaders, ASU was able to generate new resources and increase access to existing ones.

19.3.3 An Institutional Vision of Universal Learning That Demands That a University Be Ready and Able to Deliver Instruction in Many Modalities to All Learners

ASU does not operate as a traditional university. ASU considers itself a learning enterprise that embraces the Universal Learner® concept, which rests on a recognition that, in a rapidly changing, technology-driven world, people will need to access education and learning platforms throughout their lives. ASU does not limit its educational services to people enrolled in degree programs, people on its campuses, or people of traditional college- and graduate school-attending ages. This is a different institutional model and self-conception than other American universities, including large public universities. Under President Michael Crow's leadership, ASU has intentionally designed and implemented a learning enterprise model. In addition to degree programs, ASU is committed to developing high-quality learning services and experiences that take less time and cost little or no money to complete. These services and products are relevant and useful and address several pressing social and economic needs. As a result, when schools closed due to COVID-19, ASU had the capability and the culture to quickly make quality, effective learning experiences available to elementary students, secondary students, college students, P-12 students, parents, and professional educators. Years of developing its capabilities as a learning enterprise enabled ASU to apply entrepreneurial means—agility, inventiveness, and adaptation—toward fulfilling its charter mandate to assume fundamental responsibility for the economic, social, cultural, and overall health of the communities it serves.

19.4 Conclusion: What's Next

When P-12 students, their families, and schools needed the university and its resources, ASU moved quickly to provide as much support as possible. There was no single initiative to respond to the P-12 educational challenges presented by the pandemic. In fact, there was no time for institutional planning, yet there was a need for an institutional response. Because of its distinctive design, capabilities and culture, ASU was able to mount a robust, many-faceted response.

While it is too early to assess the impact of that response, ASU is monitoring several of its efforts. Though ASUPD has received positive feedback and increasing demand for its Online Teacher Corps Training, it is observing a few challenges and trends. The pandemic accelerated the transition into digital environments whether schools and teachers were ready for that change. The immediate shift highlighted the lack of training, experience, and resources to implement quality and rigorous learning experiences in many districts. Feedback from teachers participating in ASUPD's Online Teaching Corps illustrates that there are significant gaps in skill

sets and knowledge in digital teaching methods and that the gaps varied significantly by type of school (rural vs. urban areas). Further, those with greater gaps of knowledge found the online training environment to be more challenging.

MLFTC is continuing to place interns in virtual placement settings. MLFTC is also prototyping courses and modules for community educators and working with schools and communities to determine what roles and skills schools will need to ensure that the disparities and inequities of school closures are minimized.

ASU's efforts continued to grow and change throughout the summer. The university will always prioritize, further responding and supporting P-12 schools and learners beyond the pandemic. ASU for YOU continues to make resources available for P-12 programming. ASU works with potential funders about how to evolve these ideas and conduct both internal conversations and informal conversations with various constituents as events change and needs are recognized. One acute area that requires further attention is leadership. ASU clearly sees a need and demand for leadership training to equip school, district, and state leaders to address the promise and challenges of digital and blended learning.

The extreme stress caused by the pandemic revealed cracks in our normal ways and helped us see that they have been there all along. As ASU has responded to the disruptions caused by COVID-19, we have peered through the cracks in the normal and have seen the brittleness of some of the assumptions and current practices in education. But we have also seen paths to possible and promising learning futures. During the pandemic, we learned more about this under duress. But it will help us learn more by design in the future. The crack in the normal offers us all a glimpse into the possible.

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