LEVERAGING EMERGING ACADEMIC DATA FROM REMOTE AND ONLINE LEARNING TO IMPROVE POST PANDEMIC DIGITAL LEARNING INFRASTRUCTURE

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What is the trend of enrollment in some or all distance education courses? Disaggregated by institutional control, membership?

Fall Enrollment, by Distance Education and Student Level: Fall 2017 to 2021
- No distance ed
- Some distance ed
- Exclusively distance ed

12-month Enrollment, by Distance Education and Student Level: Academic Years 2019-20 to 2020-21
- No distance education
- Some distance education
- Exclusively distance education
Student and instructor preference for course modality

- **Face-to-face courses**: Faculty deliver instruction in person. 55% of instructors preferred this modality, while 31% of students preferred it.
- **Hybrid courses**: Mix of face-to-face and online with instructor deciding the modality for each session. 22% of instructors preferred this modality, compared to 14% of students.
- **Fully Online courses (asynchronous)**: All instruction and course activities are online. 15% of instructors preferred this modality, compared to 12% of students.
- **HyFlex courses**: Offered both face-to-face AND fully online at the same time with student deciding the modality for each session. 12% of instructors preferred this modality, compared to 9% of students.
- **Blended courses**: Mostly face-to-face with some online elements. 10% of instructors preferred this modality, compared to 9% of students.
- **Fully Online courses (synchronous)**: All instruction and course activities are online. 4% of instructors preferred this modality, compared to 9% of students.

**Notes:** 5% of instructors indicated they have no preference of modality. Instructor survey question: "In general, I prefer teaching courses..." Instructor n=1,749. Student survey question: "If I had to choose just one way, in general, I prefer taking courses..." Student n=2,056.

**Sources:** Time for Class surveys 2023, Tyton Partners analysis.
Beliefs about generative AI writing tools’ impact on student learning, responses as of March 2023

- **Administrators**
  - Non-user: 52%
  - AI user: 50%
  - Neutral: 40%
  - "I believe AI generative writing tools will have a negative effect on student learning"

- **Instructors**
  - Non-user: 54%
  - AI user: 29%
  - Neutral: 21%
  - "I believe AI generative writing tools will have a positive effect on student learning"

- **Students**
  - Non-user: 23%
  - AI user: 23%
  - Neutral: 54%
  - "I believe AI generative writing tools will have a positive effect on student learning"

Notes: Survey question: “For the next few questions, please read each pair of statements and decide to what extent you agree with one more than the other. If you are exactly neutral, please move the slider to center to record your response as "Neutral."” Positive = 0-33, Neutral = 34-66, Negative = 67-100

Sources: Time for Class surveys 2023, Tyton Partners analysis
Cross-modality view of COVID Impact on Arizona K-12 and ASU

English Language Arts (ELA) and Math achievement for AZ K-12 and gateway courses ASU as indicators for emerging trends informing action.
ASU Charter

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.
Impact of COVID-19 in AZ schools: Achievement

ELA Proficiency by Race/Ethnicity declined for all groups, but gaps persist

Testing participation in 2021 was lower than previous years. ADE reports that the participation changes are not equal by subgroup.

State Overview

Math Proficiency
Impact of COVID-19 in AZ schools: Achievement

Math Proficiency by Race/Ethnicity declined more drastically for all groups, and gaps persist.

Testing participation in 2021 was lower than previous years. ADE reports that the participation changes are not equal by subgroup.

State Overview
ELA Proficiency
Graduation and dropout rates

Statewide graduation rates have decreased

Since the pandemic began, graduation rates have decreased statewide while dropout rates have increased.
Online programs saw large enrollment growth in the 2020/21 school year.
Gateway course design opportunity

**AY21 Student Outcomes**

**ASU Online**
- More than 17k DEWs (~27% of 63k graded enrollments) representing an estimated $34M in tuition and fees
- More than 8k students (~26% of 31k students) did not return for 3 consecutive terms (est. $160M revenue loss)

**Campus Immersion**
- Approximately 17k DEWs (~18% of 94k graded enrollments)
- Nearly 4k students (~12% of 32k students) did not return for 3 consecutive terms

**AY22 Student Outcomes**

**ASU Online**
- Just over 20k DEWs (~29% of 70k graded enrollments) representing an estimated $42M in tuition and fees

**Campus Immersion**
- Approximately 20k DEWs (~19% of 106k graded enrollments)

The DFW % is calculated as the total number of DFWs across the HIC courses divided by the total number of enrollments in those courses. The StopDrop rate is the number of unique students who took an HIC course and did not return for at least three consecutive terms, divided by the total number of students who took an HIC course.

Continuing persistence opportunity

**33 courses**
courses with low pass rates
that enrolled more than

**67k students**
in AY22
No clear COVID trends, although, possible AY2020 increase in success resulting from increased flexibility from faculty.
No clear COVID trends, although, possible AY2020 increase in success resulting from increased flexibility from faculty.
Among students with valid responses related to the learning environment: **All years had responses about disliking remote learning**, and this was more common in Fall 2020 than Fall 2019 and Fall 2018.

“Sitting in front of my computer all day to do ZOOM classes is the most boring, disengaging, and unmotivating thing for a new student like me to have to do. I am practically self teaching myself all of my courses, which is not going well.”

-Student A
ASU Sync developed during COVID continues strategic Implementation

- ASU HyFlex model developed for campus courses during COVID.
- Use continues in select graduate programs to meet the needs of the students.
- Opened door for the creation of first fully online Honor’s College.

ASU Sync is fully interactive remote learning using live lectures via Zoom. It can be used simultaneously with in-person instruction to accommodate students in different circumstances and to enable social distancing in classrooms.
Actions: first year English Composition redesign

- **Goal:** Improve learning/success and close gaps at scale
- Eliminated remedial writing course
- Data-informed equitable learning design
- InScribe-based peer learning community with 24/7 academic support
- Piloting streamlined path of single course
- Piloting generative AI tool Wordtune

- **Results:**
  - 1000+ students annually not required to take remedial course
    - $2M in reduced tuition costs
  - Increased pass rates from low of 66% to all-time high of 79%
  - Increased Black Students pass rate from low of 43% to 78%
  - Enrollment increased over 2-fold

**All Students**

**Black Students**
The ASU MACS Accelerator is an adaptive self-paced societal-scale pathway from middle school math competence to a STEM credential. It has a central core of content, process, and technology, which works with local human instructional support to serve as a springboard to current and future careers in STEM.
Summary

K–12 trends
- Decreased ELA
- Decreased math achievement
- Decreased graduation rates
- Increased online enrollments

ASU observations
- Gateway courses as early indicator for student success
- Campus students disliked remote learning
- ASU sync HyFlex model continues to evolve
- Faculty preference for online teaching

Data → Action
- Gateway course equitable design initiative
- Additional 1,658 students passed AY 2023 ($3.3M)
- Eliminated remedial English Comp for 1000+ students annually ($2M)
Thank you.
Academic Data, Digital Learning, Learning Analytics, and AI – 2018-Present

Justin T. Dellinger, Ph.D.
Director of Digital Learning
Center for Teaching Excellence
DE Course Enrollments 2018-22

Texas A&M University Student Demographics
## Efficiencies Example: Athletics Observer Program

<table>
<thead>
<tr>
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<th>Total Instructors</th>
<th>OPT in</th>
<th>OPT out</th>
<th>Default OPT OUT</th>
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<tr>
<td>Spring 2022</td>
<td>729</td>
<td>332</td>
<td>38</td>
<td>359 (49.2%)</td>
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<td></td>
<td></td>
<td>(45.9%)</td>
<td>(0.05%)</td>
<td></td>
</tr>
<tr>
<td>Summer 2022</td>
<td>213</td>
<td>75</td>
<td>9</td>
<td>129 (60.5%)</td>
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<tr>
<td></td>
<td></td>
<td>(35.2%)</td>
<td>(0.04%)</td>
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<tr>
<td>Fall 2022</td>
<td>788</td>
<td>317</td>
<td>25</td>
<td>446 (56.5%)</td>
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<tr>
<td></td>
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<td>(40.2%)</td>
<td>(0.03%)</td>
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Improving Learning Data & Preparing for AI

- Shared governance, strategy, and leadership
- Moving from snapshot data towards more real-time ingestion, curation, and reporting
- Improving data infrastructure, pipelines, and lakes; Ensuring better data quality
- Identifying key use cases from campus stakeholders
- Breaking down siloes across units
- Building capacity and data literacy
- Moving towards more adaptive/personalized teaching and learning
Thank You!

Thank you to Jobin Varughese for Canvas visualizations and Athletics Observer table!