

Home Is Where the WiFi Connects: Defining the Digital Divide in a Post-pandemic Campus



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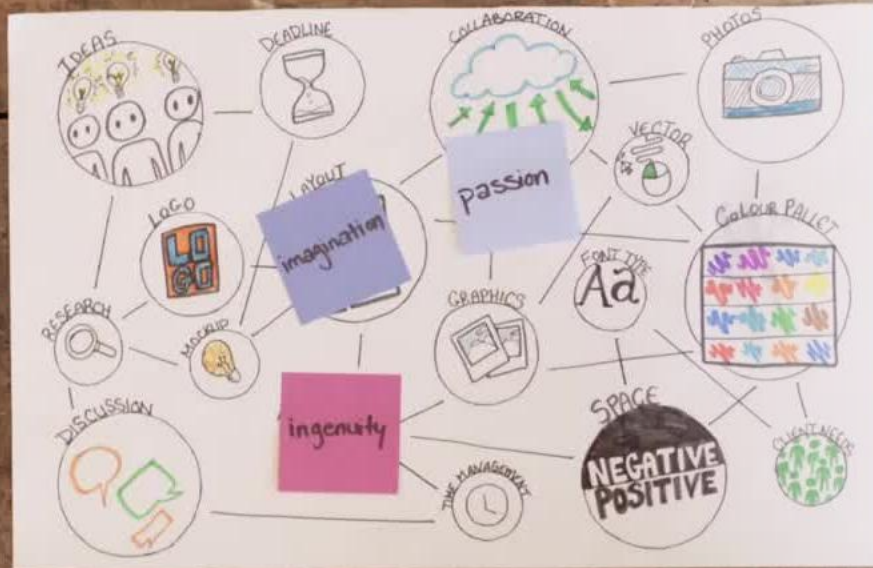
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Presentation Outline

- Finding the “Why” For My Research Interest
- Defining the Digital Divide and Review of Literature
- Research Process and Outcomes
- Centering the Student Experience and Identifying Next Steps
- Implementation Updates and Discussion





Finding the “Why” for my
Research Interests

Defining the digital divide

- In March 2020, much of higher education transitioned to emergency online education as a response to the COVID-19 pandemic and the subsequent shutdown of college and universities.
- Many students were sent home to communities and areas of the country that were not able to support reliable broadband internet service or to environments that lacked the necessary devices and software for their educational studies (Ibacache et al., 2021).
- Universities were provided with funding to address student emergency needs, first through the CARES Act and now through the HEERF (Higher Education Emergency Relief Funds) grant distribution (Atherton, 2020).
- Identified uses for these funds include providing additional devices to students and families, utilizing technology to make courses mobile-friendly and to connect students to the internet through hot spots or supplementing the costs of increased internet usage in their homes (Ratledge et al., 2020).



Why “digital divide”?

- **Students’ Treasure Chest:**

- Helped to distribute \$27 million dollars of HEERF/CARES Act Funds from 2020-2023
- Much of the first year or so included manual processes of reviewing over 16,000 applications for funding and determining appropriate fund codes to track our distribution, including unique codes for lost wages, housing/food, and technology.
- At the same time, the stories from the students provided context to what they were coping with and how the pandemic was impacting them, especially around technology and digital access at home.
- ECU is seen as a regional institution that is designed to specifically serve the rural areas in eastern North Carolina—so the digital divide became an area of research interest.



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Intersection of digital access and equity

- Households below the federal poverty level and located in nonmetropolitan areas were disproportionately affected by the move to virtual education and struggled having either high-speed home internet and/or adequate devices (Kelley & Sisneros, 2020).
- In response to the pandemic, many universities also created institutional technology programs that allowed for long-term lending and providing access to wireless internet for those who remained in the community (Jaggars, et al., 2021).
- These programs have shown to be effective in providing equity and access to students who would have otherwise been unable to continue their education or been unsuccessful in their current coursework, a new phenomenon viewed as the “COVID19 Melt” (Atherton, 2020).

Research statement

- Like other basic need insecurities, such as housing and food insecurity among college students, the next major area to be addressed is technology and digital access as a part of the equitable educational student experience—particularly students from rural/non-urban communities
- As online education and digital access remain an integral part of the higher education experience, what programs can colleges and universities implement to ensure equitable student access to technology and high-speed internet needed for academic success?
- Additionally, what skills are needed for effective digital efficacy as students navigate online coursework?



Key points in the literature

- Defining digital equity: a condition in which all individuals and communities have the information technology capacity needed for full participation in our society, democracy and economy (Pittman et al, 2021)
- Tiered approach to digital divide: school infrastructure (hardware, software and internet access); the classroom level (use of technology by students and teachers); and the individual level (students using technology to empower themselves)
- Additional dimensions of digital access within educational communities—access to hardware, software and internet connection; access to meaningful, culturally-relevant content in local languages; access to creating, sharing and exchanging digital content; and access to educators who are able to successfully use digital tools and resources (Pittman et al, 2021)

Impacts on student well-being and resources

- Studies showed increased stress and anxiety while students were caring for children or family members in the learning environment, as well as the overall decrease in mental health among students and faculty members. Articles suggested flexibility in due dates for students who experience gaps or barriers with digital requirements, as well as engaging in honest dialogue about the pandemic's strain on education and student's wellbeing (Pittman et al., 2021).
- Articles highlighted initiatives with university libraries offering "online learning kits" to students to increase equitable access, as well as emphasizing the importance of evaluating content delivery and technology tools for ADA accessibility, specifically captioning capabilities. (Ibacache et al, 2021)
- Considerations for students who are cell phone dependent, like using their mobile devices when they lack access to reliable internet service or don't have a laptop/desktop computer to complete coursework (Jaggars et al., 2021).





Skills are just as
important as
access...

- Students may experience “a digital literacy divide” between knowing and using a technology for social media engagement and using technology to create academic content (Ibacache et al, 2021)
- Digital confidence and access to the internet helped to decrease anxiety and increase comprehension around COVID-19, but that access alone was not sufficient without also having the confidence to navigate the internet effectively (Robinson et al., 2021).
- Some studies included specific instruments to measure Technological Efficacy and Technological Access. Technological Efficacy scores were much lower for students who had never enrolled in an online course or had dropped out of an online course previously (Banerjee, 2020). These studies also identified a subset of students who were first generation, low-income and non-White that had significantly lower scores of Technological Access.

Two theoretical frameworks emerged for this project:

Theory of Digital Divide (Van Dijk, 2017)

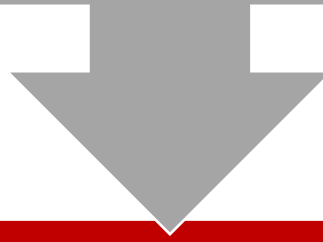
- Categorical inequalities in society produce an unequal distribution of resources.
- An unequal distribution of resources causes unequal access to digital technologies.
- Unequal access to digital technologies also depends on the characteristics of these technologies.
- Unequal access to digital technologies brings about unequal participation in society.
- Unequal participation in society reinforces categorical inequalities and unequal distributions of resources.

Universal Design for Learning (UDL)--an educational approach that works to accommodate the needs and abilities of all learners by eliminating unnecessary barriers in the educational process.

- Developing a flexible education environment in which information is presented in multiple ways
- Allowing students to engage in learning in a variety of means
- Providing options to students when they are demonstrating their learning (*Universal Design for Learning* / Center for Teaching Innovation, n.d.)

Intervention Development

Identify the targeted population—based on review of the literature, first generation, low-EFC and/or rural students have the potential to be most impacted by issues of digital divide and digital inequity. Will also take into consideration impact of COVID-19 emergency online courses and receiving HEERF/CARES funding for technology needs.



Hold 3 focus groups for selected students to assess the following:

Experience on campus related to technology and digital access

Strengths and cultural wealth that students bring to the classroom

Challenges and needs/gaps that should be addressed

Services, programs, or resources that would benefit students around digital efficacy

Project site and population

Participants in this study were students enrolled at East Carolina University in Greenville, NC, during the COVID19 pandemic (Spring 2020 through Spring 2023). While first year students enrolled at ECU for the first time in Fall 2022 did experience impact from the pandemic during their high school years, their experiences at ECU are limited. Primary focus has been placed on graduate students, seniors, juniors, and sophomore students.

Study participants were recruited through flyers and sharing information with potential groups/offices that interact with students. Each participant received a consent form that outlined the purpose of the study and provided a series of dates/times of scheduled focus groups. Focus groups were scheduled during summer of 2023 in order to capture experiences from students who were enrolled in the university as first year students during Spring 2020, as well as students who enrolled in the years following and still experienced impacts from the pandemic.

90-minute focus groups were conducted in person, with participants being asked to respond to a series of open-ended questions about the digital divide, educational technology barriers, challenges from pandemic learning, and ideas about possible university programs or supports. For this investigation, three focus groups were scheduled with up to 12 participants in each focus group. The study concluded after three focus groups had been facilitated.

Participant Demographics



The three focus groups included students that were working in the Pirate Academic Success Center as peer enrollment coaches, Orientation Assistants for First Year Orientation Programming, and student employees in the Student Technology Center within the ECU College of Business.



The groups included a total of 22 students, with a mean age of 21.7 and a range from 18 to 33 years old. Students self-reported their race, academic class and major, with 50% of the students identifying as white, 36% identifying as Black/African American, and the remaining 14% identifying as Latino/Hispanic or N/A.



For academic classes, 27% of the participants reported as graduate students, 31% as seniors, 27% as juniors and 14% as sophomores.



The majors represented included a wide variety, with speech & hearing sciences and marketing at three each, in addition to other majors like biology, clinical laboratory sciences, education, fashion merchandising, psychology, and public health.

Focus Group Protocol

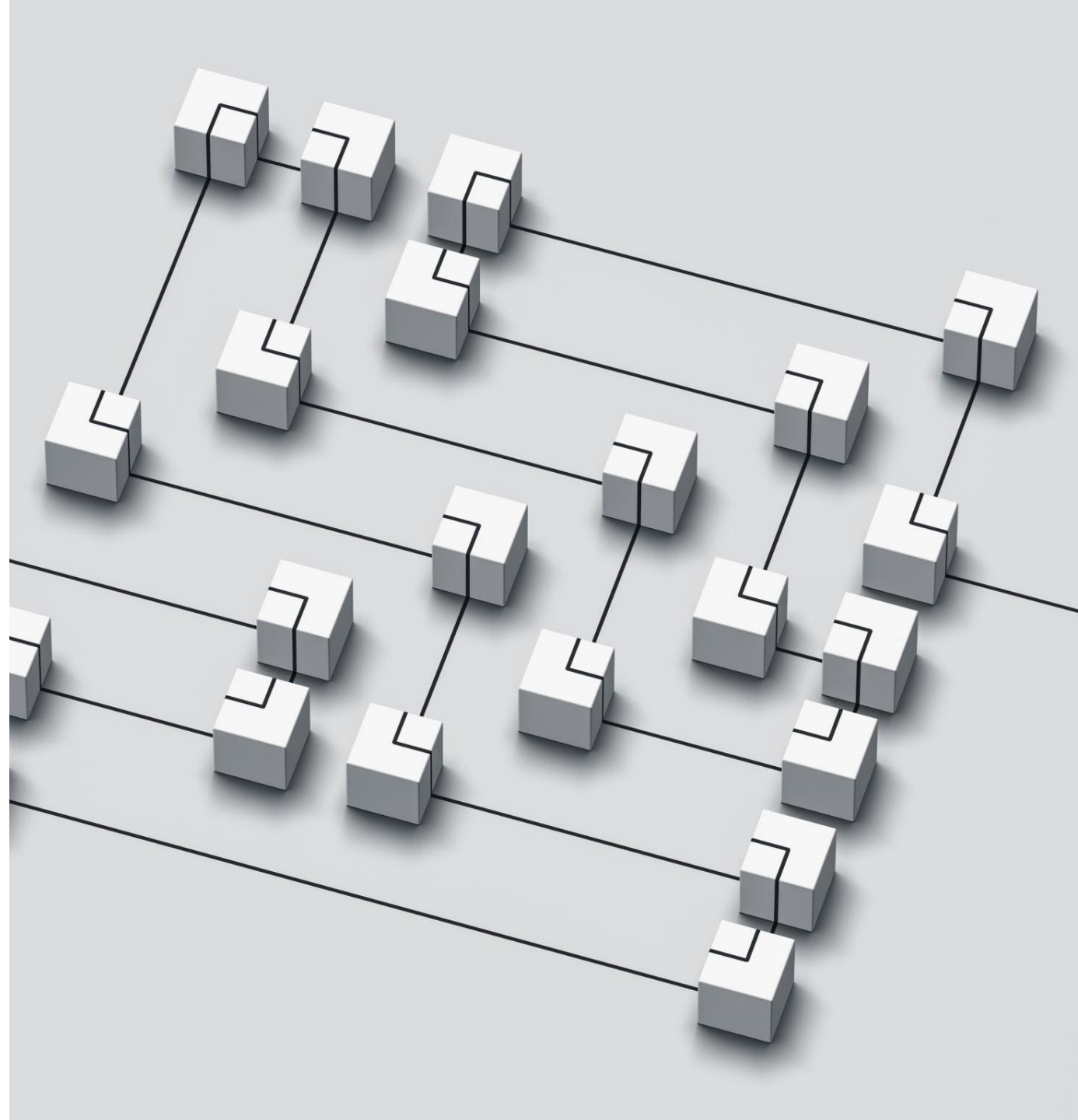
Each focus group followed a specific protocol that was approved by East Carolina University and the University of Alabama Institutional Review Boards [Thorn 23-01-6279], with standard consent forms, non-disclosure forms, and demographic sheets. Ground rules were provided, as well as contact information for any additional questions or concerns following the focus group. The focus groups were asked the following questions:

1. How do you use technology for your classes or education at ECU?
2. Why is access to digital resources or technology important to you?
3. How well do you think ECU supports students with technology needs or access to digital resources?
 - a. Follow-Up Question: Do you have examples of how the university has done this?
4. What were some challenges you experienced during the COVID-19 pandemic related to technology or digital services?
 - a. Follow-Up Question: What types of programs or resources could the university offer that would help with technology access and digital coursework?
5. Are there skills/techniques that you had to work on or learn in order to be successful while classes were offered all online or through remote instruction?
6. What do you wish your faculty members knew or understood about online instruction?
7. How would you change online courses to improve the student experience?

The focus groups lasted 45-60 minutes depending on the size of the group and depth of discussion. Students were able to provide honest feedback regarding their practices with digital technology, as well as recommendations for services, improvements, and future programming.

Data analysis

- The recordings of the focus groups were transcribed and then analyzed using a priori coding with themes developed from the review of the literature. The NVivo software was utilized for this process, with a focus on building relevant themes and related nodes through the transcripts of the three focus groups.
- These themes allowed for connection of comments and common experiences between the individual focus groups, while prioritizing suggestions for service updates and student-focused programming.



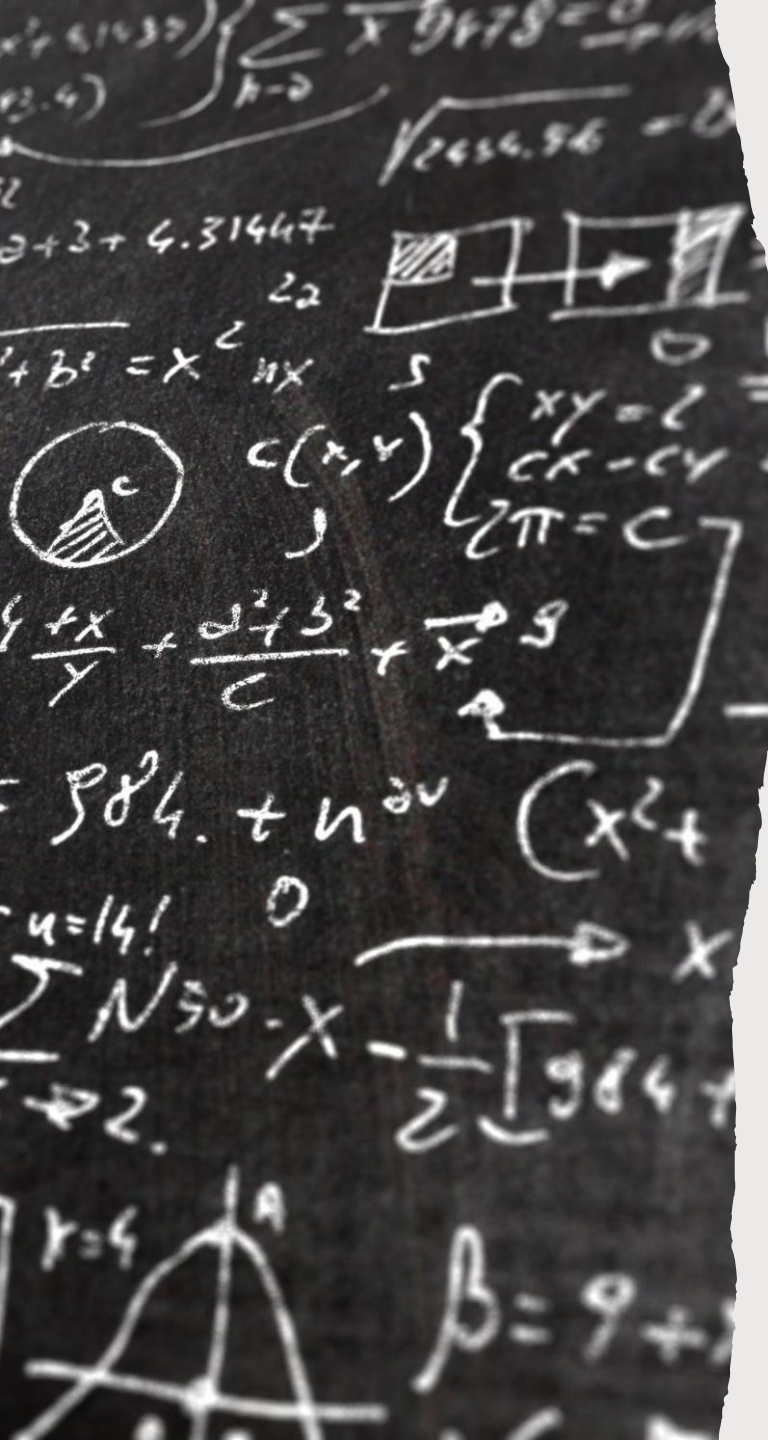


Key Themes

Current Resources and Services That Are Being Utilized

- Campus library for wifi access, computers, loaner programs and 24/7 accessibility
- Access to online textbooks changes class expectations and negates the issue of “who has their book today?”
- Faculty who have written or co-authored textbooks that are available as open access resources helps with costs, as well as not having to purchase bubble sheets or blue books when exams are taken online
- Movement towards using “DocuSign” and other online forms to replace printing and scanning necessary forms
- Using virtual office hours for questions, as well as engaging with library services and writing center services online



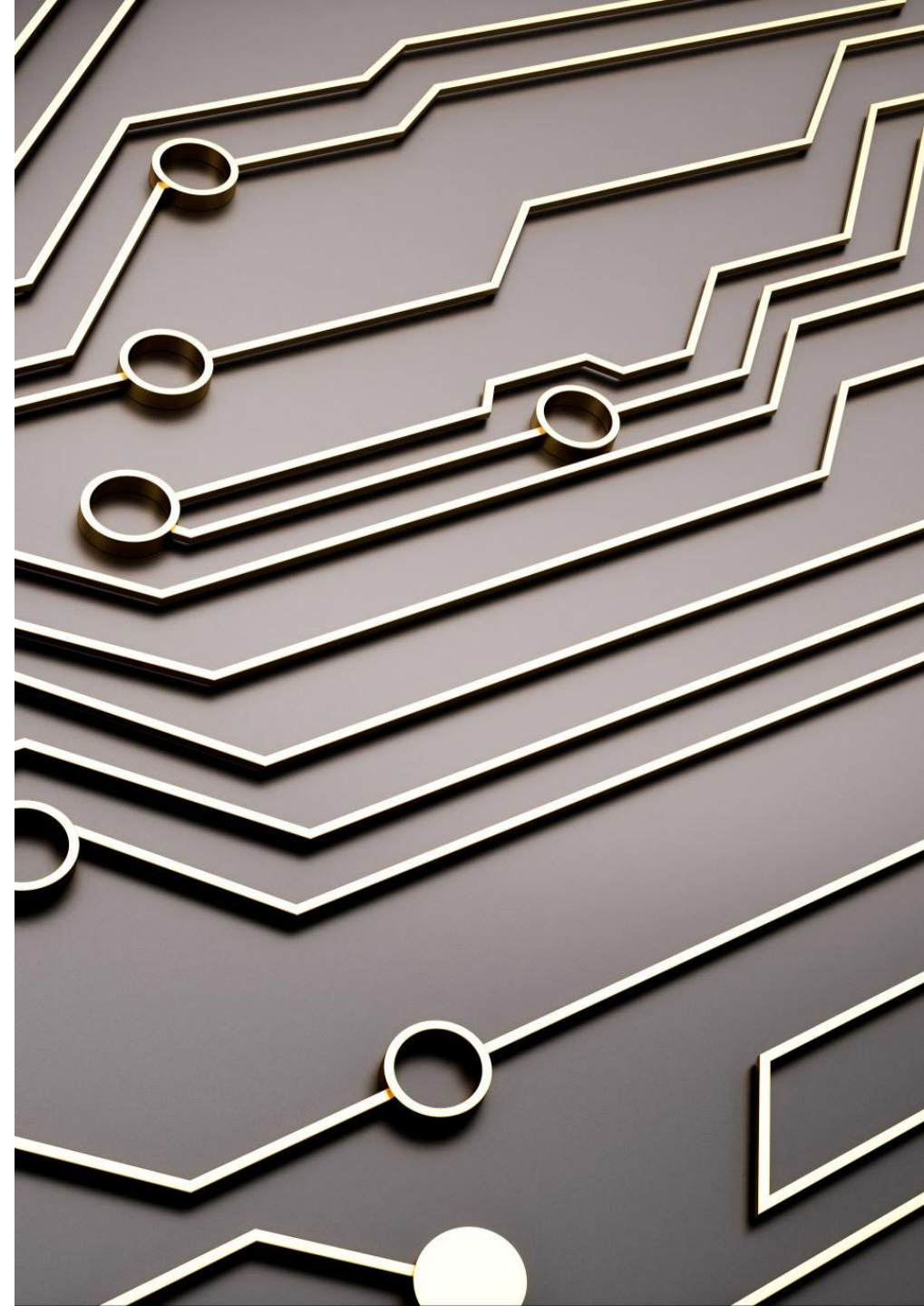


Impacts of COVID on Technological Access

- Quick transition and being told “just to figure it out” while also navigating a LMS change. “We went from Blackboard to Canvas to home.”
- Loss of motivation during online learning—“it was just about surviving.” “Get it done and move onto the next week.”
- Lack of access to laptops and personal devices, with a focus on financial limitations. “If you don’t have it like that, you can’t just buy laptops or upgrade your internet.”
- Inclusion of family needs and balance of responsibilities. “Our dining room became my mom’s kindergarten classroom”

Challenges that Students Face related to Technology/Digital Resources

- Decrease in faculty interaction with asynchronous courses and overreliance on course logins beyond standard LMS. “It’s almost like we’re teaching ourselves the content.” “I found that it was impacting my mental health, and I had always loved learning, but I didn’t like school anymore.”
- Frustration with paying for numerous access codes or logging into multiple platforms, especially if the standard LMS has the capability for that task.
- Disappointment that online course codes and texts can’t be retained from semester to semester, which decreases the value of paying for the material, especially if it’s used in multiple classes.
- Paying for materials that end up being unnecessary, like buying a clicker and then being told they can just text from their phone.
- Multiple examples of having the right operating system or hardware to complete certain tasks, as well as learning to navigate numerous systems for synchronous meetings





Technological Efficacy Skills

- Learning to transition from Google Classroom to Microsoft Office products, especially spreadsheet utilization and formulas
- Explaining how to login to the preferred wifi connections on campus
- File organization and management, particularly saving as a PDF and uploading documents correctly
- Email etiquette and formatting, including all necessary details while using appropriate style and language “making sure it doesn’t look like a text message,” along with proper typing skills
- Skills like organizing email box and using cloud-based storage

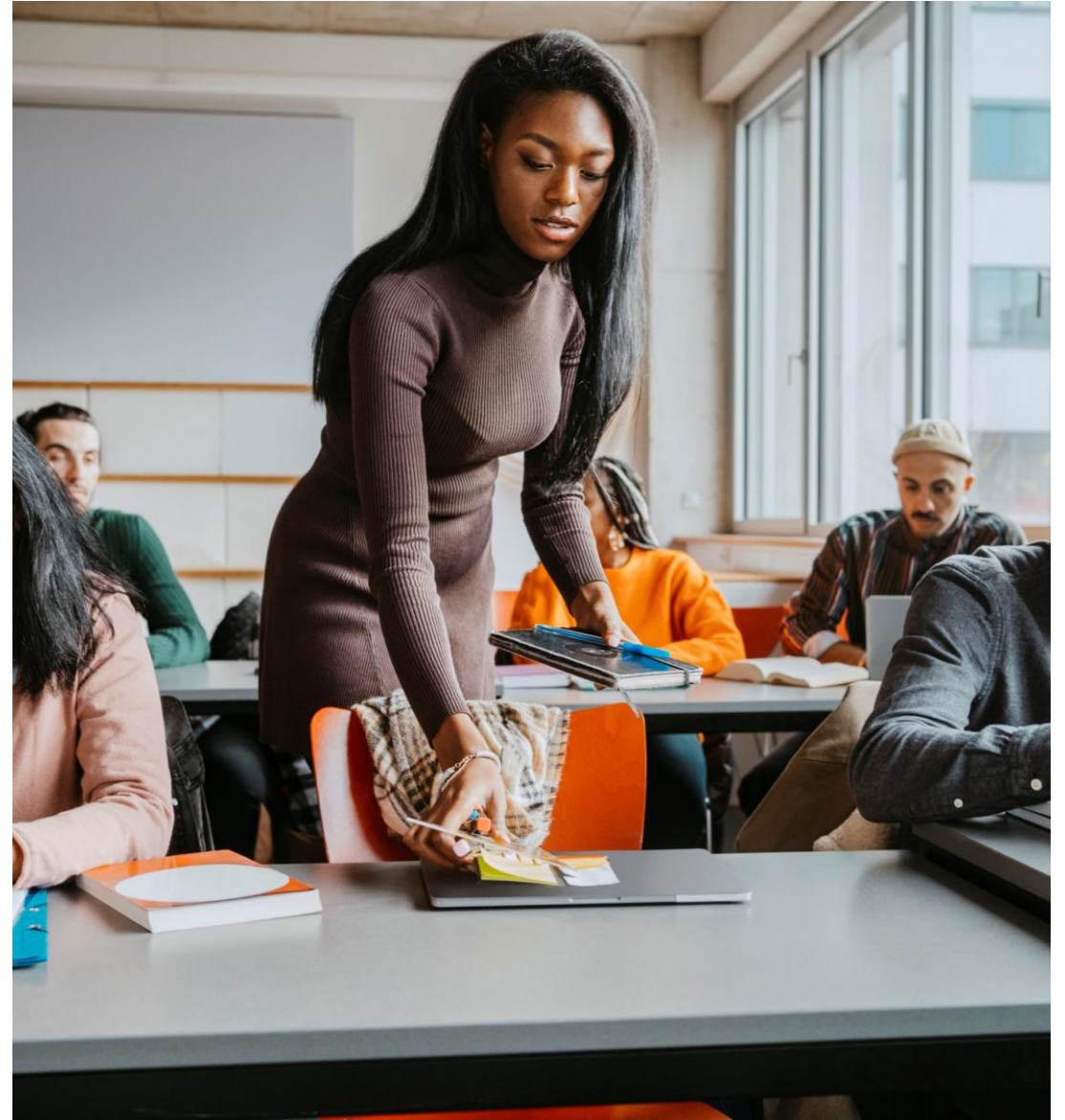
What could the University do to help? What do you wish Faculty knew?

- Regular or required training around LMS skills, regardless of technology experience “They’re tech savvy, they’re close to our age, but they still have challenges.”
- Having timely notifications or announcements when deadlines are moved, as well as addressing due date times that are weird, incorrect, or inconsistent
- If a faculty member does choose a different platform outside of the LMS, providing an explanation of how to use it and important features
- Selecting one meeting platform across campus that is standard
- Encourage students to complete the Canvas “Getting Started” video for students



What could the University do to help? What do you wish Faculty knew?

- Have faculty provide check-ins on assignments or even explain how to use office hours, even if it's an online course. "Just because it's online doesn't mean you can't interact with us."
- Request for faculty to be flexible and recognize that technological emergencies do happen. Many students are adjusting to the LMS, especially transfer students. "It doesn't mean we're incompetent with the course content, just that it's a new system for us."
- Wanting faculty to know that some students didn't grow up with the financial means to have access to everything they need and they simply can't afford course materials, especially course codes

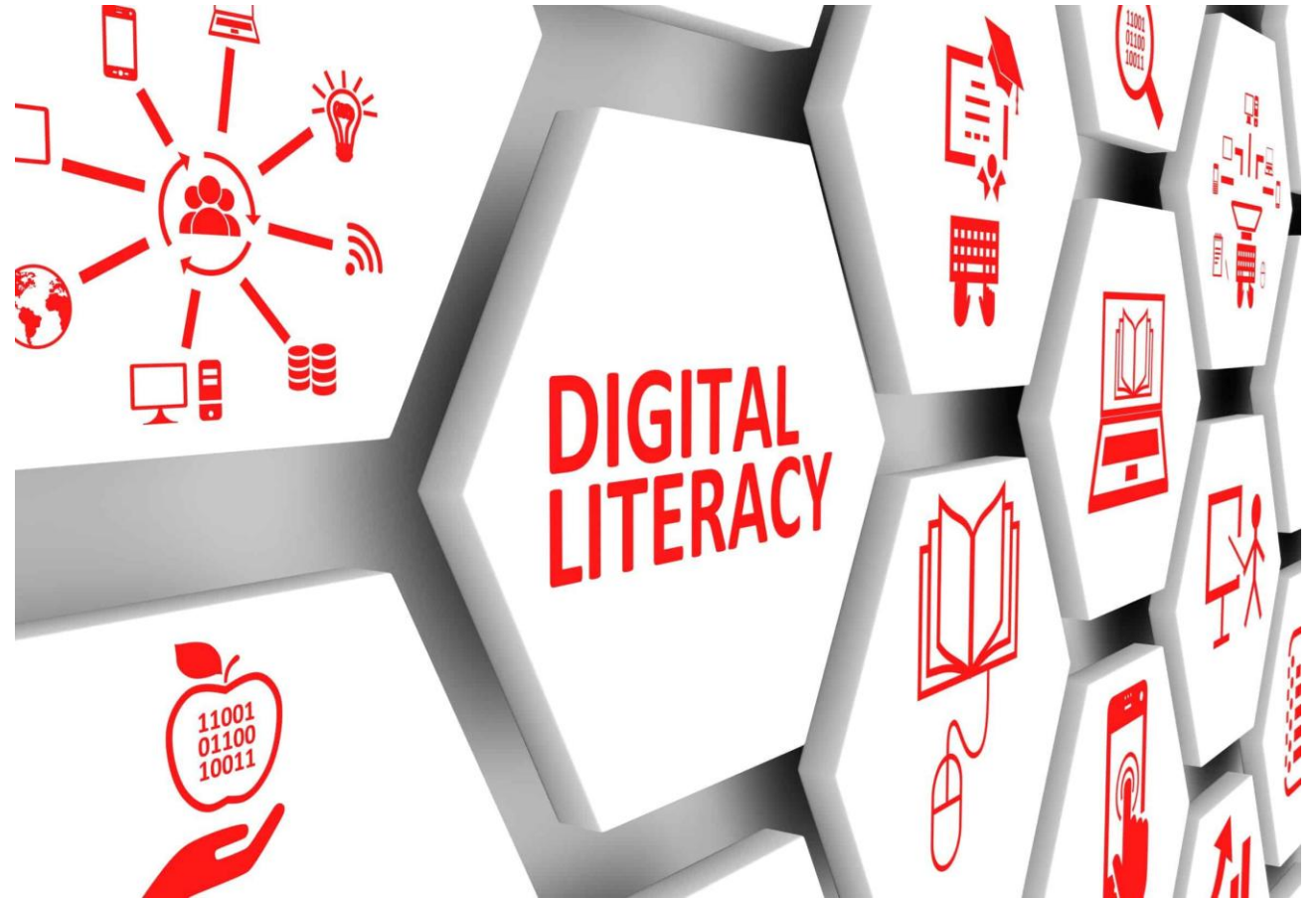




Centering the Student Experience & Next Steps

Discussion and Analysis of the Results

- Assessing the needs of the post-pandemic student, including learning and skill losses
- Campuses needing to be aware of technological efficacy gaps while continuing to provide access to hardware/internet services
- Digital literacy can be incorporated at multiple points along the student journey, especially as we look at adult learners and transfer populations





Financial Barriers and Legislative Impacts

- Results showed a need for continued conversations on access and financial barriers, especially around course codes and digital textbooks
- Opportunities to explore options around open access materials, open educational resources (OER), and Inclusive or Equitable access programs with textbook companies and university bookstores
- Transparency of costs and how these are shared with students before and during the course adjustment period could be critical for students' financial decision making
- Legislative changes in several states (notably Texas and Louisiana) requiring “course marking” — providing information during course-registration periods about required course materials, including ISBN and retails costs, and whether the course is using exclusively free or affordable materials

Identifying faculty, staff, & administrative support



Inquiries about existing faculty training, as well as current practices for course material selection and utilization of open educational resources while recognizing the importance of faculty empowerment in content management



Assess options for transparency with course material pricing and how this is shared with students, in addition to Inclusive and Equitable Access programs with our current bookstore management



Catalog courses that are requiring external paid logins as a part of the course grade and use data to guide college/department decisions while working to integrate these features into the current LMS



Seeking out ways to assess and integrate digital literacy skills in introductory courses, orientation programs, first-year or transfer seminars, or other milestone points along the academic journey



Investigate potential modules in the existing learner management system or host workshops/programs that include collaborations with student-facing services and resources

Limitations

- Lacks experiences of commuter or “distance education only” students. Students who attend class on campus or have access to physical resources (campus library, campus wifi, etc.) cannot compare their experiences to those who live a greater distance from campus.
- Majority of students were relatively involved in campus activities and working in roles that required knowledge of resources. Additional efforts should be made to include students who are not currently engaged at that level.
- Future demographic information should be collected around rural, first-gen and Pell-eligibility to align with the literature.



Implementation Updates for 2025...

- Moved to a textbook/course materials program in Fall 2024 with Barnes and Noble that included digital access and content
- Worked with Financial Aid to pilot moving several key forms from PDF to Formstack (with SSO security options)
- Continued to work with our non-tradition/post-traditional students in our ECU Online and Project Kitty Hawk/Flight Path programs that need specific supports for digital access and literacy skills
- Created a new program series from the Center for Student Success “Life Hacks” that included elements of digital literacy, like email etiquette and writing techniques



Questions for discussion



What are some examples of policy changes or programs that you've implemented on your campus to address the digital divide?



How have your post-pandemic students' needs changed as we return to a mix of online and in-person instruction?



What data have you used to advocate to leadership for increased awareness and consideration of the digital divide gaps?



What challenges or barriers do you find when working with students who still lack digital access or technological basics?

Questions?



Conclusion

"Digital inclusion must evolve as technology advances. Digital inclusion requires intentional strategies and investments to reduce and eliminate historical, institutional, and structural barriers to access and use of technology."

- *National Digital Inclusion Alliance*

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