“Technology is great, but it’s really time-consuming:”

Understanding Students’ Digital Academic Lives

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We’d like to start off with thanks, first to Lisa and all of the folx who organized the conference for inviting us to speak this morning – we are very glad to be here. We were interested to hear Larry Irving’s keynote yesterday – much of the ground he covered aligns well with what we’ll be talking about today. And before we talk about our research and what we’ve learned, we wanted to thank everyone who’s made our work possible: the students and faculty we interviewed, our terrific research assistants, and our library colleagues.

Like all of you, we’re interested in how we can help our students be successful in college and after they graduate. We are library faculty, and we most often work with students outside of classes when they use the library: to study and do homework, to access print and online resources, and to find help with their research. (This is the reference and tech support desk at Brooklyn College.) As librarians we can observe students using our libraries, so we’re especially interested in where and how they’re doing coursework when they’re not in the library. And we’re also interested in what (if anything) might be preventing them from doing their work in the libraries.
We’ve been researching the CUNY student experience for over 10 years, and our interest is in where, when, and how CUNY undergraduates do their academic work. We have interviewed and surveyed over 900 students and over 130 faculty at 6 CUNY colleges. Here’s a brief outline of the research we’ve done, and you can find our full protocols on our research website (and we’ll share the link for that at the end).

**How are students using digital technology?**

In our research we’ve heard directly from our students about their experiences using a wide range of digital technology in support of their coursework. We also heard from students about how technology can sometimes prevent them from doing their academic work, barriers that may take many forms.
As everyone at this conference is aware, mobile technology is a critical component of our students’ academic landscapes. Smartphones are the all-but-universal technology for students. While we did meet students in our first round of research 10 years ago who didn’t have a smartphone (and even a few without a cellphone at all), every student we have interviewed since 2015 has had a smartphone. (And these are some photos students took in 2010, as you can probably tell from the “vintage” Blackberry on the left.) It's worth noting that we've seen students using the same strategies with smartphones for their academic work throughout the 10 years of our research.
Ubiquitous smartphone use is a trend we can see in a June 2019 report from the Pew Research Center which shows steady increases in the number of US adults, and especially between the ages of 18 and 29, who “go online mostly using a smartphone” or even exclusively using a smartphone. It’s important to note that reliance on mobile devices for accessing the internet is, according to Pew’s results, increasingly cited as a reason for not paying for broadband at home.
As we heard in Larry Irving’s talk yesterday, home broadband access is down in the US, and many people use smartphones as their sole internet access. The same Pew survey reveals that 27% of US adults report that they do not have broadband internet in their homes. And increasingly, exclusive use of smartphones for accessing the internet occurs at a higher rate for people of color and people in lower income brackets as well, demographics that match our students.
Our student participants told us how much they appreciate their smartphones and take full advantage of the various features in support of their school work, as this quote illustrates. Students have told us about using the camera to take photos of readings or notes on the whiteboard in class, and in the library we see them taking photos of call numbers in the online catalog when we help them find a book at the reference desk. They use them anytime and anywhere to communicate with instructors or classmates, as well as to access the various digital platforms to check on requirements and due dates, and to complete work from any location, including on the commute.

Smartphones also feature in student academic landscapes in more personal ways, for example one student recounted to us that she was in bed at home late at night and found she had a sudden inspiration for her paper. Rather than get up and retrieve her laptop she simply used her smartphone to type up her thoughts.
Another reason CUNY students love their smartphones and use them for schoolwork is because they spend a lot of time on the commute, and they appreciate that a smartphone allows them to record and access their academic work on the go. This slide depicts an aggregate map from 2015 when we asked students to map their movements over one day: the red dots represent BMCC students, green for Brooklyn College, and blue for City Tech.

Mobile technology seems ready-made for our commuter student body. CUNY students have long commutes – our participants told us, and CUNY student experience surveys confirm, that the majority of students are commuting an average of 45 to 60 minutes each way. Fully half of students who responded to the 2016 student experience survey reported that they commute to campus between 6 and 20 hours per week. (And that doesn’t even include commuting to work or for leisure – they spend most of that time on public transportation!) We also know that many CUNY students come to class multiple days per week, and some even come to campus when they don’t have class, if they need a place to study.
...and they work on the commute

Students have told us that access to mobile technology, particularly smartphones, allows them the opportunity to do readings and sometimes writing on the commute. We were so surprised the first time a student told us about writing a paper on their phone, miming typing with their thumbs, and when we heard confirmation from faculty that they received assignments with the “sent from my phone” text at the bottom, though this is now a decade ago. (These images are in response to asking students take or draw a picture of a location where they do their academic work.) While the commute is often not a comfortable space for students to work, some describe it as a way to “escape” the not-always-pleasant conditions of the subway or bus.

Students’ work with technology on the commute must accommodate intermittent access to the internet on most subways, though cellular access is possible on the bus, and increasingly wifi is available on buses as well. Because internet access may be limited, some students have told us about sometimes elaborate preparations involving photographing or scanning or downloading readings to their smartphones so they are able to read uninterrupted on the commute.

In our research we’ve seen an interesting shift in students’ expectations about how they use smartphones – a decade ago students viewed the use of smartphones (or ipod touches which were mentioned in 2009) for academic tasks as an additional strategy, on top of the other technologies they use for school. As smartphone ownership has increased so too has the expectation and desire among students to be able to use them for any academic task, including interacting with Blackboard and CUNYFirst as well as other applications their instructors use, writing papers, and doing homework.
Student expectations for how mobile technology will work are not always being met. We heard from many students in our more recent interviews that a smartphone is not enough – it’s just not possible for students to rely solely on a smartphone for all of their coursework, and they are frustrated when they encounter barriers.

Notwithstanding the fact that some students do actually type entire papers on their phones on the commute, other students have told us that they struggle to view course materials and to type or otherwise input data or interact with their schoolwork on the small screen of a smartphone. Another potential barrier to using smartphones for schoolwork is access to wifi and the internet. Many of our student respondents have noted that without wifi or data access there are limits to the academic work they can accomplish on their phones.

And mobile technology is not necessarily as reliable for web-based applications as we might hope. As this student quote suggests, many websites remain mobile-unfriendly: they may not display properly or include all features on mobile devices. As well, when working in some web-based or mobile apps there is often not a “save” feature that could serve as a backup in case work is lost. It is clear that not all students fully understand why some cloud computing applications do save, while others do not.
Students have told us that they appreciate many aspects of desktop computers and laptops, which we think of as full-featured computing. (And here are some student drawings of the ways that they use desktops and laptops in their schoolwork.) A full keyboard is easier to type on, especially for long-form writing and in depth research. They also appreciate the large display and have told us that many websites look better on and are easier to use with the larger screen of a personal computer, especially those that require interaction like entering data or those that spawn pop-up windows (e.g. Blackboard, CUNYfirst, etc.).

Students who have them have raved to us about laptops as a technology they most appreciate for doing their academic work. They note full-featured computing combined with the ability to work in locations that are convenient for them, including in various locations at home and on campus, and sometimes even on the commute.
Laptops are not always mobile

“[I bring my laptop] maybe once a week. **Because it's heavy.** Plus my books. It's heavy. It kills my back. Because I'm in school from 11:00 until 8:30.”

While it’s technically accurate to describe laptops as mobile technology, many students have told us they are not able to take full advantage of their laptops as such. For some students it is simply that they don’t bring their laptops with them to campus – many have long days and even a lightweight laptop can be an added weight that students don’t want to carry, as you can see in this student quote.

A number of students we have spoken with had bad experiences of forgetting to charge their laptop or leaving their charger at home, and that experience had soured them on bringing a laptop with them to school. Other students have complained about problems with wifi access on campus, including slow connectivity on saturated networks or wifi dead zones in classrooms or other campus locations.
Personal computers are not always usable

“...I have a computer at home, it’s annoying though because sometimes my computer will be broken a little bit and I have to send it to Geek Squad and then I don’t really have a computer for a week or two which is very stressful because my major is in computers.”

And personal computers do represent an expense, an expense that students have told us frankly includes challenges with computer maintenance, everything from hardware problems to system updates to viruses. Sometimes students are unable to solve these problems or to arrange for repairs, which make their computers unusable, like the student quoted here.

And of course an important expense is the cost of internet access at home, which is all but required for computers to be maximally useful. The move towards reliance on smartphone access to the internet and the decrease in home broadband are trends that have a lot of potential to impact our students.

With the emphasis on mobile technology in consumer culture, and given how busy we know our students are, we might anticipate that older technology models like the campus computer lab are less relevant. However, based on what we know about students’ heavy reliance on mobile technology and how they may increasingly not have broadband at home, it’s no surprise that they are heavy users of our campus computer labs.
The student experience survey shows that students use our campus computer labs extensively. In the 2016 survey, 78% of students reported using them at least once per semester. And you can see that students reported a variety of reasons for using the labs, which we’ve also seen in our research. Note the relatively small percentage of students — 4% — who report that they do not have internet access at home. Keep in mind that while 4% is a small proportion of students, that is 4% of 240,000 CUNY undergraduates, about 9,500 students, or just about one student in every class, on average.
The 2018 student experience survey results continue to show extensive use of computer labs on campus, with 76% using them at least once per semester. And students also reported that they are largely satisfied with the labs. However, what we learned from talking to students during our research is more nuanced.

Printing remains necessary

“I always print it, cause it’s kind of hard for me to sit at the computer and read stuff, I will get bored and I will find something else to do while I’m on the internet.”
Printing is one of the main reasons students used our labs. It is difficult to overestimate the usefulness of our labs for printing, because while it seems like we’re always just on the cusp of moving to a paperless society (and have been for 20 years), in fact, we have found that printers remain a critical technology for students. There are a number of reasons for this.

Our work with students accords with several recent studies that have shown that undergraduates have a clear preference for reading academic texts in print. They report “better focus and retention of information presented in print formats” and preferring “print for longer texts” (Mizrachi, Salaz, Kurbanoglu, & Boustany, 2018, p. 1). And we want to especially refer to our Queens College colleague Nancy Foasberg’s 2014 article about student reading practices. Most of the students we have spoken with print out online readings if they can, or they buy, rent, or borrow the physical rather than the digital book. Student told us that they often find reading online to be distracting (like the student quoted here), and they also appreciate print as a format that is easy for them to access on their commutes.

Another important reason students often need printers, as we know from our research and also from our work as academic librarians who have computer labs in our libraries, is that students print their assignments when faculty require it. While some faculty do encourage submitting, marking up and editing, and returning written work through web-based applications, our student participants told us that they most often are required to print their assignments to hand in.
Even students who have printers at home often will choose to print on campus to save on expensive consumable supplies such as ink and paper. At the same time all of the CUNY colleges have at least some free printing allocation for students. We’ve often heard from students that printing assignments before class is a persistent pain point: anticipating frustratingly long lines in computer labs (as you can see in this student photo), they’ve described organizing their entire day around the need to print an assignment as a focal point, including leaving home early, and skipping social or study time. And the crush of students that we see at computers in our libraries at the times when classes begin confirms this.

Other reasons students have told us they rely on campus labs include convenience – particularly if they have a long gap between classes or don’t have a quiet place to work at home – as well as lacking a working computer or printer, or proper software, or broadband at home.

With the access challenges students told us about, it’s not surprising that many do use the computer labs in our libraries and other campus locations. While it’s good to see the student experience survey responses that indicate that students are satisfied with campus labs, it’s worth noting that in our research students have shared that they are often frustrated in their attempts to use computers in campus labs.

### Space negotiations on campus

“My first year, I didn’t have the Microsoft Word application so I couldn’t type essays. So I would spend HOURS on hours sitting here and trying to focus while people are chewing gum and talking on the phone and arguing and hitting each other. It says it’s a ‘Learning Resource Center’ but in actuality it’s a ‘Hang Out With Your Friends and Look at Your Cousin’s Wedding Pictures Center’ . . . ‘on Facebook.’”

This quote is one of our favorites, and illustrates the tension that many students expressed to us when trying to get their coursework done in a busy, crowded computer lab where other
students are not doing academic work. And as this student also mentions, sometimes they need to use software that they don’t have access to at home, so they may be required to use campus computer labs to complete their coursework.

Space negotiations at home

“My house is very noisy, it’s a lot of noise, and the thing about it is if I can’t study on campus, I would go home and sit in this little corner [. . .] everybody knows that while I’m in the living room and I’m studying, they can’t come in and watch TV.”

For some students home is an ideal place for them to do their coursework, affording them quiet access to the technology they need for their academic work, including a computer, printer, etc. One important advantage of working in shared home spaces for some students is the support they get from family members.

But many students don’t have private or quiet space at home, though mobile technology can help (laptop, smartphones). Shared technology can mean lots of negotiating at home for some students, juggling their academic needs with the needs of others in their households, like the student quoted here. And some students just don’t have much technology or internet access at home (or even any, beyond a smartphone).
Space negotiations elsewhere

“I like to do it at work because I do a lot of multitasking, I have, I split my screen, one for homework, and . . . one is on Blackboard and the other is on the office. So usually I’m doing both things back and forth and still answering the phones.”

We’ve also learned about students’ use of technology for their academic work in other places, including at their jobs, at public libraries, and other public locations. Clearly, workplaces may not be the most conducive to focused study, though some students told us they could take advantage of down time at their jobs, as this quote illustrates. Many of our students are familiar with the public libraries from their high school days and use public libraries near their homes for computer and printing needs. In addition to also being public and potentially crowded, printing at the public library carries a fee.

Some students work at the CUNY library nearest their home – something we encourage with generous access policies that allow space and computer use as well as CUNY-wide borrowing. For schoolwork that requires internet access elsewhere, students tell us they look for free wifi at Barnes and Noble or Whole Foods; while publicly available wifi is increasing in New York City it’s still not everywhere.

“Technology is great, but it’s really time-consuming”

As eager as they are to use technology for their academic work, students have also shared their concerns with us about using college-provided systems and infrastructure, and the time-consuming barriers they encounter.
Technology availability challenges

“Sometimes when trying to access blackboard to check or post assignments, the system is temporarily down which is frustrating especially when doing group assignments that have a strict deadline.”

Students most often mention the challenges they encountered when using Blackboard, and occasionally when using other systems. Their perception of Blackboard’s poor usability is a primary concern; students mention the cluttered design and clunky interface which makes it challenging for them to find, participate in, and submit assignments, especially from a smartphone.

Another common frustration is when college-provided platforms are unavailable during times when students and faculty need to use them, which you can see in this quote from a student. Students and faculty acknowledged that while some outages are due to unforeseen circumstances, others are the result of required, scheduled maintenance during busy times of the semester.
Wifi reliability challenges

“The most frustrating thing is our schools wifi. When I’m on campus trying to watch our videos it doesn't load properly it will pause frequently.”

Wifi speed and reliability is especially a concern for students who own laptops or tablets, some of whom have told us that they have to use the (wired) computers in the computer labs rather than their own devices for certain tasks because the wifi is unreliable, especially if they are attempting to complete high-bandwidth assignments such as watching a required video (as in this student quote) or taking an online test. Students also note the frustration of other students “wasting bandwidth” – using campus wifi to watch movies or play games.
Students also articulate a lot of frustration about perceived lack of technical and academic support, in particular they note a lack of technical support for online learning outside of business hours or the regular academic calendar. This quote from a student is about writing, but speaks to the need for support at times when we might not think support is needed.

A commonly reported student frustration is with the inflexibility of deadlines in Blackboard, which may not allow for late submissions, and the lack of support at certain times for technology they are required to use. For example, the 11:59pm deadline to submit work is the default in many online systems, a time when support from neither the instructor nor the college help desk is typically available. This can prevent students from successfully submitting their work to an online system. Students have also told us that email support is problematic as the latency inherent to email especially frustrates them when they have a question or are struggling with technology.

**How are students and faculty using technology in online courses?**

We’ve also studied some of the ways that CUNY students and faculty – specifically those in online and hybrid courses – use technology.

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Support availability challenges

“I'm worried my thesis isn't as strong as it needs to be and because its spring break I don't know where to get help editing it.”
Results from the 2016 Student Experience Survey suggest that many CUNY students are interested in additional opportunities for online learning: this graph shows that 40% agree or strongly agree to wanting more online courses, and 45% report the same for hybrid courses. We’ve also seen a rapid increase in the availability and use of OERs – open educational resources – at CUNY in recent years, facilitated in part by the New York State funding to support OER adoption which began in 2017.

In our research, students and faculty report a range of experiences in their use of technology in online and hybrid courses, including some of the challenges that we’ve already mentioned and that affect all students and faculty using technology: access to technology, the usability of required platforms, and the availability of support.

They also shared concerns about skills with technology, and communication and connection in online courses.
Teaching with technology

“I have to cobble together the best experience I can from a whole slew of different technologies, each of which has its merits but falls short in some other way, and I have to pick just the top 3-4 technologies for a single class, because otherwise the students get overwhelmed.”

Unsurprisingly, faculty told us that they’re using learning management platforms for online and hybrid courses, including though not limited to Blackboard, our CUNYwide learning management system. Also common was use of online collaboration tools, presentation software, and streaming media. Fewer faculty report that they use feedback tools, lecture-capture or screencast software, or data analysis applications.

Faculty have told us that they sometimes struggle to effectively create and curate the technology environment for their hybrid and online courses within the constraints of the technologies available through the university and on the open web, as this quote illustrates.
Keeping this instructional technology context in mind, we have also asked students about the kinds of technology they use in their hybrid and online courses, and where they use it. These students report a similar combination of a laptop at home, a desktop computer on campus, and their smartphones in all locations to complete their hybrid and online coursework as all CUNY students.

Indeed, it’s important to remember that for CUNY as a whole, most undergraduates taking online courses are not distance learning students – they are taking hybrid and online courses in conjunction with in-person classes. As we have observed in our libraries, and as our research confirms, students in hybrid and online courses are consistently using campus computers to complete homework assignments, and even exams in their hybrid and online classes, as you can see from these two student quotes. We think of this as online learning with in-person technology.
This student quote illustrates that many of the technology constraints we've already discussed – that smartphones are insufficient for students as the sole device for completing coursework, that campus computer lab access can be challenging, that inconsistent campus wifi is a barrier to high-bandwidth academic work – are especially problematic for faculty teaching and students taking hybrid and online courses. And the impact of these barriers on students using campus-based computing for hybrid and online coursework is really important to keep in mind as the university commits more heavily to online learning.
Faculty wishes for student tech access

“A basic internet connection at home by some students is a barrier for good performance.”

“It would be super if I could give our students good laptops to use at home.”

Some faculty members acknowledge that technology may be a barrier for students in completing their hybrid and online coursework. As these quotes suggest, faculty are aware that CUNY students may have inconsistent access to technology or internet off campus that is required for their academic work.

Expectations for educational technology

“I would get an alert everyday when my online assignments are coming due. Just like my bank alerts me when bills are coming due a week in advance. That will be great.”
We have also heard expectations from both students and faculty for educational technology to perform as well as and in similar ways to technology they use in other settings, for example, commonly-available commercial Internet applications that they use for banking (as in this student quote), shopping, and social media.

Students want support

“A place where you can get feedback or questions answered right away from your professor. Like an instant messaging portion rather than email, which takes time.”

The related issue of support also looms large in hybrid and online student replies, with students noting that they wish for more availability of both technical support and academic support (that is to say, support from their instructors). Like all students we have heard from, the main issues with technical support we hear from hybrid and online students is its limited hours of availability compared to anytime online access to the platform. Online and hybrid students more consistently express a strong desire for support and feedback from their instructors right in the moment that they need it, than other students do.
Faculty also expressed their desire for support in teaching online. Several have mentioned their own inexperience with technology as a barrier to fully engaging with online teaching tools. Some report that they use Blackboard because it is the technology they know, not because they feel it is the best technology to use. Other faculty express a wish that they had more instructional technology support to assist them in designing and implementing their hybrid and online courses. Many faculty also note the time needed to keep up with technology for teaching, like the faculty member quoted here.

"We are in an age of tech resource overabundance and I just wish there was a way (and time) for me to curate it and keep track."
Finally, both students and faculty expressed a wish for more interaction – synchronous and asynchronous – in their hybrid and online courses. While faculty wish for more student engagement on discussion boards and other areas of the online course platform, students note a lack of community and a sense of isolation, as these student quotes illustrate.

**Data privacy in educational technology**

The last topic we’ll touch on today is data privacy, which is critical to consider as the university invests more resources into online learning and student success, including the acquisition of educational applications and platforms for student and faculty use.
With a team of researchers from Indiana University, University of Illinois, University of Wisconsin, and Northwestern University, we’re currently participating in the Data Doubles project to investigate “student perspectives of privacy issues associated with academic library participation in learning analytics initiatives” (http://datadoubles.org). This project provides an opportunity to hear in students’ own voices about what they expect and prefer that our libraries and colleges will do when collecting and using their data.

We’re coming in at the second year of a 3 year project, and we’ve been interested to see the results from student interviews conducted last year at the other universities. Our co-researchers found that “students trust their institutions” “see value in data gathering to inform service improvement” but at the same time they want to be informed of the “scope of data captured” preferably through “active consent” (Jones et al., 2019, p. 272).

Next Spring we’ll be implementing a survey with our co-researchers at CUNY and the other institutions to gather larger-scale data on students’ understanding of and preferences for their educational data privacy. Earlier this semester we interviewed two CUNY students as part of testing the survey questions, and as we progressed through the survey the students told us that the survey questions made them think about their data in ways they hadn’t before, illustrating the value of educating students about the institutional academic technologies we use. As educators, we have a responsibility to provide students with opportunities for critical thinking about what we’re doing with their data, especially data that is collected by systems that we

What do students think?

“Initial data suggests that students trust their institutions and see some value in data gathering to inform service improvement, but that they would like to provide active consent, [and] better understand the scope of data captured.”

(Jones et al. 2019)

http://datadoubles.org/
license from third party vendors or that is stored outside the university’s servers.

And in a timely coincidence, just a couple of weeks ago the Pew Research Center released a new report on Americans’ perceptions of privacy. This table from the report has a few data points, but we specifically want to highlight the high percentage of respondents who feel that they have little control over their personal data that is collected by corporations and the government, and especially that 81% are concerned that the risks outweigh the benefits specifically when companies collect their data.
CUNY’s mission is critical

“The Legislature’s intent is that The City University be supported as an independent and integrated system of higher education on the assumption that the University will continue to maintain and expand its commitment to academic excellence and to the provision of equal access and opportunity for students, faculty and staff from all ethnic and racial groups and from both sexes.”

As we continue to expand the use of academic technologies at CUNY, it’s absolutely vital that we are mindful of data privacy and the university’s historic mission, excerpted here. We are the university for New York City. Many of our students are members of populations who are already over-surveilled and potentially vulnerable to the dangers of data collection, including but not limited to our undocumented students. Our students trust us, they trust this institution. We have a responsibility to ensure that we know what student data our academic technologies collect and how it’s used, and that students also know.

How can we best support student and faculty use of digital technology?

We want to wrap up with some thoughts and questions about how we can best support using digital technology for academic work here at CUNY and elsewhere. How can we make things easier for our busy students to successfully complete their coursework and graduate? How can we support all users of technology on our campuses?
Finding ways to learn more about student and faculty realities and constraints is critical. We do this research so we can advocate for and make changes in our libraries and on our campuses to support student success, but there are other ways to learn more about the student and faculty experience. For example, the biannual CUNY student experience survey is a great resource, as are local campus surveys of both students and faculty.

We can also think about ways to make it easier to share information, to learn about what we’re all doing with educational technology across all campuses. This conference is a terrific space for that kind of sharing, but how do we make this more visible? Especially for faculty across the university, who can be isolated, and adjunct faculty, who are by definition not on campus full-time.

On a smaller scale, faculty can ask students at the beginning of the semester about what kinds of technology they have access to, where they find space and time to do their academic work, and where they might need support with technology. We can’t mitigate every factor that affects students – for example, we can’t give them broadband internet at home if they don’t have it (as Larry Irving mentioned yesterday, roughly 1/3 of NYC households don’t have broadband) – but knowing more about their experiences can help us help them work around their constraints.

Recommendations

• Ask students and faculty about their realities and constraints
• Find ways to share information within and across campuses
• Be flexible wherever/whenever possible
• Insist on robust support for mobile tech and usability best practices
• Experiment with tech to meet specific student needs
• Consider tech availability for students across CUNY
• Expand tech support for students and faculty beyond business hours
• Increase opportunities for and awareness of instructional technology support and training for students and faculty
We can also be flexible wherever possible. When we teach, can we accept some assignments electronically rather than requiring students to print them out? Can we spend time at the beginning of the semester reviewing the technologies students will be expected to use? These are just a few examples – again, knowing more about our individual students can help identify areas for flexibility.

Smartphones are the most common technology that students have access to, though as we’ve seen, the limitations of required digital platforms can constrain student ability to use smartphones for their academic work. We must be sure that the systems and applications CUNY supplies and supports for students and faculty to use are evaluated for mobile-readiness, and whenever possible technologies should be selected based on mobile usability. Mini-surveys can allow students to supply feedback on a variety of technology topics including common barriers with university systems, computer labs, wifi, etc.

Additionally, we have found that CUNY students and faculty use technologies intentionally and creatively to achieve learning goals. Both students and faculty bring into the classroom functional and user experience expectations based on consumer-facing technologies, and often report that required academic digital platforms fall short. CUNY should leverage its position as a significant customer to seek improvements to bring educational technologies in line with commercial standards in user experience and usability.

Students do much of their academic work on campus, even for their hybrid and online courses, and require access to robust wifi, as well as our computer labs (with appropriate software applications) and printing; we must remember that they may have inconsistent access to technology off campus. Continuing to maintain and upgrade campus-based computing support and infrastructure is key to student success. It’s also critical that we find ways to ensure that students can find an academic environment that enables them to work successfully, and to find ways to mitigate the noisy social environment we sometimes see in our campus labs and libraries.

We might consider other technologies we can offer on campus. Can we distribute kiosks or other mobile-friendly print solutions throughout campus, not just in computer labs? Can our libraries offer laptop loans to students rather than finding space for new computer labs? And it may be worthwhile to explore the feasibility of providing all CUNY students with a laptop and cloud-based access to required academic applications, as we already do with Office 365 and the CUNY virtual desktop.
Further, while we are most often embedded in our local context, one of the unique strengths of CUNY is that we are 25 campuses accessible by public transportation. We know that our students study (and faculty do research) at CUNY libraries that are convenient to their home or workplace even if that’s not the college they attend – how can we make it easier for all CUNY students, faculty, and staff to take advantage of our university? Can we streamline physical access to campus for anyone with a CUNY ID? Can we look into offering printing for any student at any campus? Can we offer universal wifi access to all CUNY students, faculty, and staff, regardless of what campus we’re on?

Students expressed frustration with a lack of technical support for online learning outside of business hours. Can we shift the default course deadlines in Blackboard and other systems to within business hours, as well as increase after-hours support CUNY-wide?

We need to think creatively about how we support educational technology. Faculty feel overwhelmed by instructional technologies available to them for teaching hybrid and online courses, and want more support as they incorporate college-provided and external applications and platforms into their teaching. And our students’ prior experiences with educational technology vary widely – even those who come to us from the NYC public high schools. We can’t assume that they arrive in our classrooms and on our campuses ready to use the technology we ask them to use with no training or support.

While students and faculty are interested in more training and support around technology used in hybrid and online courses, we have found that they are largely unaware of existing opportunities. Increasing awareness of campus training, and creating and promoting online training, can help fill this gap in perception.
We want to caution against overreliance on the trope of the digital native: the belief that today’s college students are fundamentally different than in the past, and that their skill and competency with digital technology can be assumed since they’ve grown up in “the digital age.” In fact, research has shown (and probably your own experiences too) that students’ experience of and preparation for using technology in their academic work is uneven. A recent study of K-12 students by the nonprofit Joan Ganz Cooney Center revealed that digital skills are weakest for students from low-income backgrounds whose parents lack experience with technology, which puts them at a disadvantage in college compared to students from economically-privileged backgrounds. This quote from a faculty member who teaches hybrid and online courses is illustrative.

Resist the trope of the digital native

Students “are savvy with gadgets and software that enhance their personal lives, but they lose confidence when navigating technologies for learning.”
And finally, as our educational technology efforts expand, we must remember the importance of data privacy, for our students as well as ourselves as CUNY faculty and staff. Many of us are excited about the potential for student success platforms like EAB and Starfish as well as home grown platforms (which we get to see at this conference) to improve our students’ outcomes, but we must be mindful of the risks inherent in any data collection – especially those housed externally to the university – as well as the potential benefits. We at CUNY are well-positioned to insist on strong data privacy policies for our students and ourselves. It’s important to educate ourselves and our students about data privacy, and to consider straightforward, clear language about consent as a form of education, too.

We hope that hearing students voices from our research inspires you to ask your own questions on your campus, and encourages us all as we work together across CUNY to best support students and faculty using technology.

Learn about data privacy

“I put a certain amount of confidence in [my library and college] to not use information with mal intent, not using information in a way that doesn't benefit me or my success or benefit my personal situation”
Thank you!

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