Technology Master Plan Draft
2022 – 2025

Contents

Introduction

The Saint Paul College Technology Master Plan is a roadmap to ensure that technology decisions support the College's strategic plan and reflect the institution's mission, vision, and values. The Plan serves as a framework for guiding technology investments, decisions, and efforts to assure alignment between technology strategies and the institution's priorities, reflecting the distinct needs of Saint Paul College students, faculty, and staff and providing transparency into technological investments.

The most benefit will be gained from the Technology Master Plan when it is integrated into the annual planning and decision making, is reviewed for relevancy and is adapted to meet the changing needs of students.

Planning process

Developing the Technology Master Plan began in November 2020 with the guidance and advice of the Saint Paul College Technology Committee. It has moved through several stages, including gathering input from faculty, students, and staff and identifying external forces that might affect the organization. From this input, the Technology Committee has identified six areas of focus that should direct the work of the IT Department.

Date	Process Step	Activity
Spring 2020		-Saint Paul College moves the majority of courses to remote learning due to the COVID-19 pandemic. -The EDUCAUSE survey of students is administered. Although Saint Paul College did not participate, data from students attending other Minnesota State Colleges is available. -Two surveys of students regarding their needs during Pandemic are administered
Fall 2020	**Step One: Understanding the mission** Why do we exist? Where do we want to be?	The Technology Committee convenes and begins monthly meetings to develop a Technology Master Plan. The Committee is comprised of faculty, staff, and students. Discussions reinforce the mission of IT as supporting the mission, vision, and values of the institution.
		"Support for Online Students Workgroup", a series of discussions with the CIO, VP of Academic Affairs, and faculty members identify the technology access and support students, faculty, and staff needs as the College continued to work and learn remotely.
	Step Two: Current State Analysis	Internal SWOT analysis

	What are our strengths, weaknesses? opportunities and challenges?	
Fall 2020		College Annual Planning Process: The goals and objectives of the IT Department for FY22 are established
Spring 2021	Step Two: Current State Analysis What are the external variables that will impact the IT Department and the College?	The Technology Committee develops and administers a survey for students to gauge their experience and satisfaction with Saint Paul College technology. The survey also offers an opportunity for students to provide suggestions for improvement
		CIO and IT Team identify external forces impacting the IT Department's ability to be successful.
	Step 3: Identify Priorities Where are we now, and how do we get to where we want and need to be?	Technology Committee reviews data collected from various sources and identifies six areas of concern. The Committee recommends these areas be central to the Technology Master Plan.
Fall 2021 – Spring 2022		Saint Paul College begins the strategic planning process
		IT Department identifies and submits budget adjustment recommendations
Fall 2022 - Spring 2023	**Step 4: Identify and prioritize activities** How do we translate strategic priorities into actions?	.
	Step 5: Identify measures How do we measure success?	
	Step 6: Review and adjust Plan	
		Technology Committee recommends a comprehensive Technology Master Plan

Step One: Understanding the mission

COVID-19 emphasized that technology can be an innovative tool to further the mission of the College by providing students, faculty, and staff with the technology they need to be successful. Technology decisions

should advance the College's mission and improve its ability to respond to future opportunities and challenges. To accomplish this, collaboration and communication between IT and students, faculty, and staff must be continually improved.

The Technology Committee and the Support for Online Students Workshop participants noted that students do not have access to the technology and support they need. Both groups advocate for technology tools that support a variety of pedagogical approaches and provide faculty support. The input from these groups directly tied the IT mission to student success. The goals and objectives identified in this Plan should closely align with these concerns.

Step Two: Describing the Current State

The current state information provided is limited to a technology lens. It is important to note that other forces operating on Saint Paul College, and influencing IT decisions, include the COVID pandemic, declining enrollment, and increased competition from other education providers.

Strengths, Weaknesses, Opportunities, Threats (SWOT)

Among the strengths identified, the IT Department is thought to have a knowledgeable, experienced staff with good work ethics. They are responsive to the campus and provide good customer service. Generally, IT staff members have long employment histories with the College and have developed extensive knowledge of its IT infrastructure and constituents. Staff members enjoy working with students and helping them succeed.

The tension between the budget and the need to supply quality tools for faculty and staff was mentioned as a weakness, as was the limited technical resources available for students in need. Staff resources dedicated to documenting systems and procedures and disaster recovery plans were also noted.

Resources available through the Minnesota State Colleges and University System were identified as an opportunity. The opportunity to work on projects with other schools and share expertise with other IT departments was mentioned.

The most worrisome threat identified is security and recovery from a disaster. Cybersecurity threats such as web intrusions and zero-day vulnerabilities are increasing, and more institutions are being targeted. The threat to Saint Paul College is intensified by the lack of resources available to test and update disaster recovery plans.

Environmental Scan

Advances in adaptive learning systems, artificial intelligence, data science, and options for no-code/low-code software hold the promise of delivering individualized approaches to student learning. Students' expectations of higher education are rising; there is increased competition from new entrants with well-developed digital capabilities (boot camps, micro-credentials, Google/Microsoft) offering new and flexible modalities to serve those looking for knowledge. Technology advances play an increasing role in supporting successful pedagogical approaches, streamlining processes, and predicting student support needs. As the college considers instructional modalities that provide flexibility in student learning and teaching, Information Technology planning must consider the infrastructure and investments needed to support these

enhancements. Faculty, staff, and students will need support and professional development to transverse this changing landscape.

Data analytics will be increasingly used to pinpoint student preferences and successful teaching strategies. Foreword thinking higher education providers will develop micro-target campaigns to attract and retain students. They will use data analytics to establish prescriptive strategies to improve success rates and develop innovative programs based on market trends.

The pandemic has provided more acceptance of a variety of course modalities. As the Internet of Things, virtual reality, and augmented reality develop, the opportunities for engaging students regardless of location become a reality.

Remote teaching, learning, and working have expanded the Saint Paul College computing network beyond the physical constraints of the campus. Students and employees have enjoyed opportunities to work and learn from the location of their choice. Although it remains unclear to what extent remote working and learning will be valued, our "borderless" network and the increase in cybersecurity attacks mean that more resources will have to be invested in security activities. Developing institutional processes and infrastructure to assure data confidentiality, integrity, and availability will continue to be a primary security concern requiring IT resources.

As MinnState's NextGen project moves forward, more IT resources will be needed to provide campus-level feedback and implementation.

Step 3 and 4: Identify and Set Priorities

The Technology Committee is recommending the Technology Master Plan focus on six areas to advance the mission of the College and address the opportunities and challenges impacting the organization.

Goal: Provide equitable access to the technology needed to succeed.

Objectives:

- Utilizing data from library and IT checkout programs and align inventory of checkout items to need (Fall 2022)
- Enhance infrastructure to support robust remote access solution (2021-2022)
- Build infrastructure to support students' access technology w/basic device (2022)
- Focused support and information resources for students (Brightspace, O365)
- Open Lab re-configuration (Spring 2022)
- Review distribution of pcs on campus (Summer 2022)
- Evaluation purchase/lease program for students (Fall 2022 – Spring 2023)

Goal: Work collaboratively to increase familiarity with technology and to improve data literacy.

Objectives:
- Support Technology tutors and Technology Coaches (2020-2022)
- Continued support of the system-wide effort for Technology Orientation
- Central location for student and faculty resources on the web (2020-21)
    - Technology coaches and tutors building library of videos for students (2021 – 2022)

Goal: Improve campus and classroom technology

Objectives:
- Replace/upgrade instructor stations (Target: Spring 2022)
- Classroom upgrade (digital projects/Global Viewer) (Fall/Spring 2020-2022)
- Provide training to instructors on classroom technology each semester (Fall 2022)

Goal: To provide the highest quality service to students, faculty, and staff

Objectives:
- Increase communications: Buzz/Student Broadcast – technology focus
- Adapt ITIL 4 as a framework for delivering IT Services (Spring 2022)

Goal: To protect access to data, networks, systems, and applications

Objectives:

MFA (Spring 2021-Fall 2021)
Enhance patching/end-point protection plan (Spring 2021 – Spring 2022)
Update and test disaster recovery plans (Summer 2022)
Identify assets by risk and importance (Spring 2022)

Goals: Discover useful information, inform decisions, and empower employees by delivering self-service data technology

Objectives:

EPM11 replacement > SSRS/Power BI (Spring 2021 – Spring 2022)
Consolidation of processes to improve efficiency and accuracy of data across functions (Ongoing)
Build pathways to data retrieval (data lake, ease of retrieval, multiple delivery methods) (Fall 2021 – ongoing)
Enhance data architecture and service to securely and reliably deliver data to desktops; Phase II: 2021-22)
Increase support and training on data security and self-service data technology

Step 5: Identify Measures

The success of the identified goals will be measured by the accomplishment and results of the associated objectives. Each objective should include a means of measuring its impact on the goal.

Step 6: Review and adjust the Technology Master Plan

The most benefit will be gained from the Technology Master Plan when it is integrated into the annual planning and decision making, is reviewed for relevancy and is adapted to meet the changing needs of students.

Appendix A: Planning Committee Members

Rizvi, Bushra	Staff

Chahal, Simran	Faculty
Cregan, Joanna L	Faculty
Gage, Patti	Faculty
Keller, Isa J	Faculty
LeDuc, James	Faculty
Tiffany, Chelsea	Faculty
Tri, Ben M	Faculty
Vainshtein, Alli	Faculty
Nguyen, Lisa	IT Staff, 2021-22
Roster, Ellen	IT Staff
Sorenson, Nichole	IR Staff, 2021-22
Turner, J.C.	IT Staff
Hallman, Cullen	Student, 2020-21
Thompson, Alan J	Student, 2020-21
Bahmani, Zahra	2021-22 Student Senate representative
Truong, Vu	Student, 2021-22
Yang, Kong	Student, 2021-22

Appendix B: EDUCAUSE 2022 Top 10 IT Issues

- #1. *Cyber Everywhere! Are We Prepared?:* Developing processes and controls, institutional infrastructure, and institutional workforce skills to protect and secure data and supply-chain integrity

- #2. *Evolve or Become Extinct*: Accelerating digital transformation to improve operational efficiency, agility, and institutional workforce development

- #3. *Digital Faculty for a Digital Future*: Ensuring faculty have the digital fluency to provide creative, equitable, and innovative engagement for students

- #4. *Learning from COVID-19 to Build a Better Future*: Using digitization and digital transformation to produce technology systems that are more student-centric and equity-minded

- #5. *The Digital versus Brick-and-Mortar Balancing Game*: Creating a blended campus to provide digital and physical work and learning spaces

- #6. *From Digital Scarcity to Digital Abundance*: Achieving full, equitable digital access for students by investing in connectivity, tools, and skills

- #7. *The Shrinking World of Higher Education or an Expanded Opportunity?* Developing a technology-enhanced post-pandemic institutional vision and value proposition

- #8. *Weathering the Shift to the Cloud*: Creating a cloud and SaaS strategy that reduces costs and maintains control

- #9. *Can We Learn from a Crisis?* Creating an actionable disaster-preparation plan to capitalize on pandemic-related cultural change and investments

- #10. *Radical Creativity*: Helping students prepare for the future by giving them tools and learning spaces that foster creative practices and collaborations

Technology Use and Environmental Preferences

Key Findings

- The average number of devices connecting to campus Wi-Fi in a given day is two per student, with an overwhelming majority of students reporting connecting two or more devices daily.
- Three-quarters of students who connect to campus Wi-Fi do so with both a smartphone and a laptop, the digital devices of choice for higher education students.
- Students continue to want face-to-face classes more than any other learning environment, with a majority preferring either completely or mostly face-to-face.
- The two most important environmental features of study spaces are that they are quiet and have room to spread out books, papers, and devices.
- No technology is more important to students when studying than Wi-Fi, with access to power outlets a distant second.
- Faculty continue to use technology during class to enhance learning, but less than half of students report being encouraged to use their own technology during class to deepen their learning.
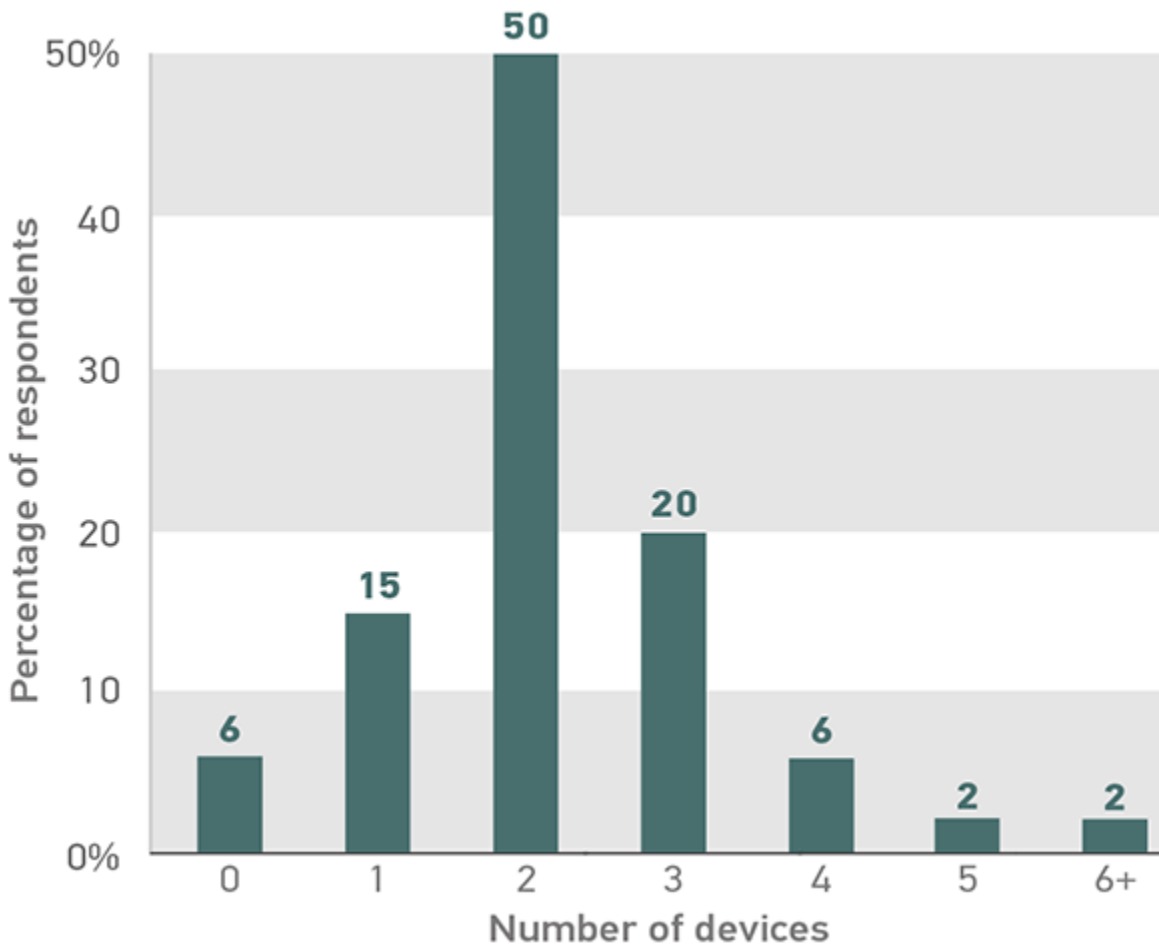
Got Devices. Got Wi-Fi?

Figure 7. Number of internet-capable devices students connect daily to campus Wi-Fi

The average number of devices connecting to campus Wi-Fi in a given day is two per student. The typical student reported connecting two devices—typically a smartphone and a laptop—to their campus Wi-Fi daily; four out of five students reported connecting two or more devices daily. Community college (CC) students are more than three times as likely to connect zero or one device to the campus Wi-Fi than non-CC students. Although most higher education institutions provide robust Wi-Fi (76–100% coverage) in many critical locations (e.g., classrooms, computer labs, libraries, residence halls), the emergency move to remote learning in response to the pandemic in spring 2020 exposed areas lacking full coverage (e.g., outdoor spaces, student unions). Institutions responded to the difficulties students were experiencing accessing Wi-Fi by loaning hotspots to students and extending Wi-Fi to outdoor spaces, especially parking lots, so that students could access the Wi-Fi from the safety of their vehicles.[1] Whatever mode of instruction and residency institutions adopt for the 2020–21 academic year, extending the range and increasing the number of Wi-Fi access points for students is of paramount importance, regardless of the number of devices students may try to connect to it.
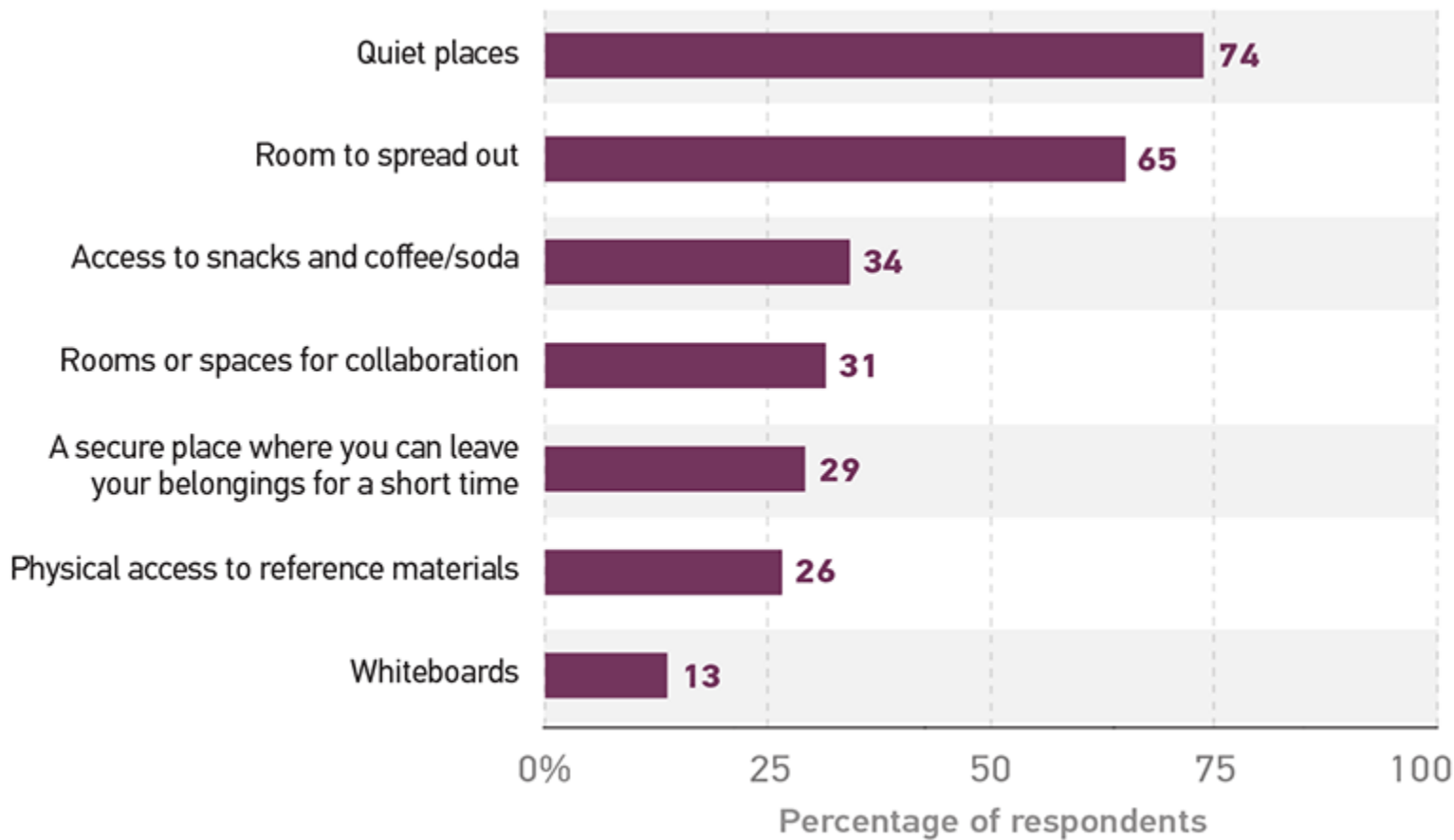
I Want My F2F

Anatomy of a Study Space

Figure 9. Most important environmental features for studying

The two most important environmental features of study spaces are that they are quiet and have room for spreading out books, papers, and devices. Nearly half (46%) of students said that both of these things are prerequisites for selecting a place to camp out for a study session, and only 7% of students did not select either of these as one their top-three features. A second tier of environmental features appears to be related to individual preferences or circumstances that supplement the need for quiet and room to spread out. The need for study spaces of one's own can be a challenge that institutions struggle to accommodate under regular circumstances. In the face of an academic year under the conditions of a global pandemic, these challenges will

likely prove even more difficult, with limitations on the room and building capacities, restrictions of the flow of foot-traffic, requirements to maintain social distancing, and the provision of sanitized workspaces.
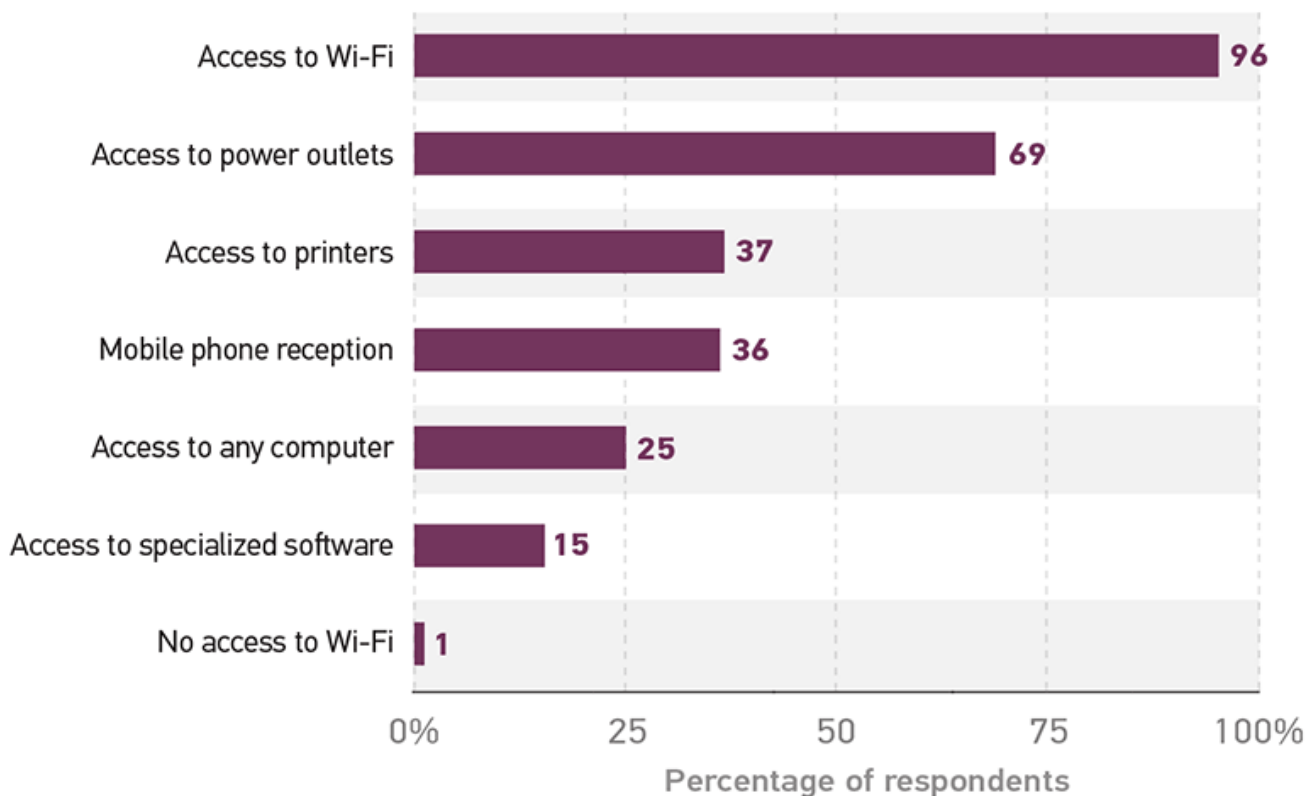
Wi-Fi: A Basic Student Need

Figure 10. Most important technological features for studying

No technology is more important to students when studying than Wi-Fi. Although digital devices are completely useless without power, access to power outlets comes in a distant second-place technology need for students. Actual devices—printers, phones, computers—are significantly less important for students when getting down to the business of studying. The clear pre-pandemic importance of Wi-Fi for students to access the internet has become universal with the emergency move to remote instruction in spring 2020; that importance is unlikely to subside in the 2020–21 academic year as students continue to navigate courses of study that include at least some online learning components.
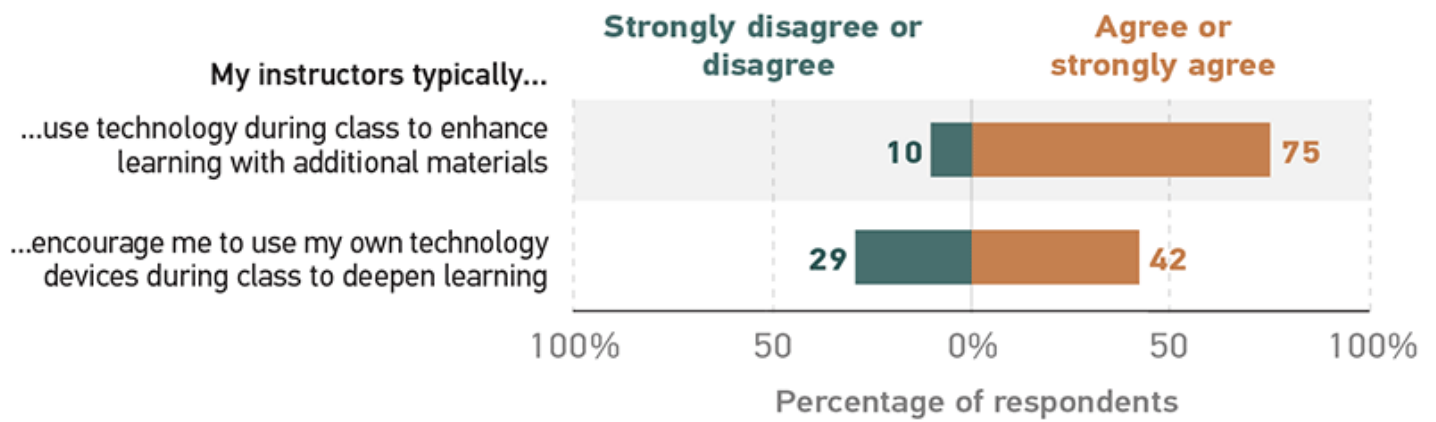
Mixed Messages

Figure 11. Student experiences with instructors and technology

Faculty increasingly use technology themselves during class to enhance learning but balk at student use of devices to deepen learning. A strong majority of students said that their instructors employ technology to enhance student learning experiences with additional materials, an eight percentage-point increase from just a year ago.But less than half of students reported that their instructors encourage them to use their own technology during class to deepen their learning. More AA students (46%) reported that their instructors encourage them to use their own technology for learning than students at other institutions. Overall, these findings support previous findings suggesting that instructors are failing to leverage students' mobile devices for learning as much as they could or as much as students would like. The emergency pivot to remote learning may have highlighted the importance of students' own digital devices to learning and may have helped instructors think about creative and effective ways to leverage student devices in their teaching.

Appendix D: Technology Committee Student Survey

Opening of survey

Welcome to the Saint Paul College 2021 Student Technology survey!

Your responses to the following questions will help the Technology Committee make recommendations regarding how Saint Paul College should use technology more effectively to benefit students. There are no right or wrong answers; we would just like you to answer as honestly as you can. Participation in the survey is entirely voluntary, and you can choose to exit the survey at any point. Your responses are anonymous.

This survey is expected to take about 5-10 minutes to complete.

Thank you,
Saint Paul College Technology Committee

1. Describe your overall experience using technology at Saint Paul College:

Poor
Fair
Good
Excellent
Don't know

1.a If poor, fair, or good:
        What technology issues have you been having, and how can we assist you?

(Below 1.a question) Did you know that tutors are available to provide help over Zoom on how to use your Saint Paul College email, D2L, OneDrive, and Microsoft Office applications? If you have any questions about tutoring, please send an email to tutoring@saintpaul.edu or call 651.403.4466.

2. How often do you use the computer lab at Saint Paul College to do homework or study?
Always
Often
Sometimes
Rarely
Never

Text to appear below question: There are computers available for student use in the Open Lab near the West Entrance of the campus Monday – Thursday 7:00 am – 6:00 pm and Friday 7:00 am – 3:00 pm

3. How often do you use the Saint Paul wi-fi when you are studying?
Always
Often
Sometimes
Rarely
Never

Text to appear below question: The college network has been expanded and is accessible from the parking lot and parking ramp.

4. What technology is most important to you when you are studying? Choose up to three.
Access to specialized software (e.g., AutoCAD, MasterCam, Solidworks, Automation Studio)
Access to wi-fi
Mobile phone reception
Access to power outlets
Access to printers
Access to any computer
Other:

5. Do you have access to a reliable device (e.g., computer, tablet, phone) that meets your needs as a student?
  5.a If not, would you be interested in a program that provides laptops for a fee? (Y/N)

Below question 5.A: Saint Paul College has a limited number of Chromebooks, hotspots, and iPads available for loan to students. Please call 651.846.1440, email helpdesk@saintpaul.edu, or visit the IT webpage or Rm 1470 to check out Chromebooks, hotspots, or iPads.

6. Do you have internet access in your home or primary place of residency?
      6.a If yes, Is the internet access in your home or primary place of residency reliable enough to meet most or all of your internet needs as a student?
      6.b. If not, where do you access the internet for school assignments:

  Text to appear below 6.b: Saint Paul College has a limited number of Chromebooks, hotspots, and iPads available for loan to students. Please call 651.846.1440, email helpdesk@saintpaul.edu, or visit the IT webpage or Rm 1470 to check out Chromebooks, hotspots, or iPads.

7 What is ONE thing you would like Saint Paul College to do with technology to help you be a more successful student?

8. Did you know and understand what technology (e.g., laptop, wireless access) you would need as a student at Saint Paul College?

Y/N
8.a: Please explain:

9. Did you have the technology skills needed to succeed when you started classes at Saint Paul College?

No
Some skills, but I managed to develop the skills I needed to keep up with my classes
Some skills, but I would have benefitted from more help with technology
Enough skills to keep up with my class assignments
Yes

9.a. Please explain:

10. Do you like to learn:

In a classroom

Mostly in a classroom, with some online learning

Half online and half in the classroom

Mostly online

Entirely online with regularly scheduled class meetings that are attended by the instructor and other students (synchronous)

Entirely online with class materials and lectures always available but no regularly scheduled class meeting time (asynchronous)

Appendix F: Support for Online Students

Technology Support for Online Students Workgroup

Questions:
What are the gaps?
What can be implemented by Jan?
What technology do students need?
How do they know what they need?
How do they know how to get it?
How do we prepare them?

Suggestions
- Have a wider pool of people and resources supporting digital literacy
    o tutoring and support
    o eLearning assistants/Digital Learning Ass't
- Central location for information on technology availability
    o Perhaps Brightspace/D2L and SPC app
- Help students make an informed decision about the technology they will need:
    o Some applications for specific programs need add't computing power
    o Some students work w/Apple products using Safari, which has diff shortcuts from Chrome. Also, use phones
- Explore laptop leasing program
- Look for grant/sponsor to increase resources to access the Internet
- Provide more assistant to students in Intro to Comp b/c they have difficulty logging in to Azure
- Orientation link on the front page of the website, including guidelines for the technology students need
- Short term checkouts for students w/temp need (broken equipment)
- Discuss whether the D2L/Brightspace homepage c/be utilized more effectively
    o Currently reserved for D2L and college-wide announcements
- Make laptops available for purchase from the bookstore (could students use financial aid?)
- Loan webcams and headsets to students
- Specific drive/push to get students to use the SPC email address and update contact information
- Embedding ppl in the right classes to assist w/ specific issues (IT work-study peer)
    o Presentation to faculty on what embedded resources are available
- Expand Title III resources to all students (orientation, cohort model).

Communications to students needed:
- Tell students about Pulse (D2l app)
- Wifi in parking ramp and yard
- How to improve hotspots and wifi at home
    o get information to students @ Internet providers helping during the pandemic.
- Students don't know what type of support they need until they need it.
- "Living the app Life" – one-stop w/all apps available (EAB, SPC App, Pulse, etc.); Home screen on app s/show technology is available – concerns @ what people post and how to respond to comments. Is this an official channel of communication? Oversight? How are stud introduced to it? How do the apps interact w/each other?
- Tell students how to forward their SPC email address
- On the web: listing of all technology available to students. Same thing for faculty
- On the web: list of technology students can access at a reduced price or free (Office 365)
- Start a collection of vetted YouTube videos for troubleshooting
- Best practices for Zoom meetings for faculty and students
    Increase information **for students** on the website and consider placement:
        Zoom resources

Appendix G: Goals and Objectives of IT Department FY 2022