Enhancing Student Academic Success with Technology
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Introduction

The current generation of students came of age in a time of unprecedented access to digital technology. In 2017, 95% of students reported that they own laptops, and 76% of students reported they were prepared to use basic productivity software programs (e.g., MS Office). This is a student population with the skill sets and tools to leverage technology for their learning and academic success. Students want more use of technology to aid them in their work of being students and to enhance their success. But students don’t all necessarily want universal access to expensive, cutting-edge technologies such as 3D printers. Students expect their institutions to provide effective and efficient technology and expect their instructors to consistently use technology to promote student success. Student expectations include ubiquitous and frictionless Wi-Fi networks, instructors’ incorporating more technology in the classroom, and consistent use of their institution’s LMS.

These expectations are not much different from those of most digital technology consumers. If students can have seamless network connectivity on their mobile devices and instant and consistent access to online content, then why wouldn’t institutions also provide high-quality Wi-Fi networks and instructors provide access to course content? We know what students desire from their institutions and instructors, but this report aims to uncover the reasons why students want more technology and more consistent use of available technology. Our objective is to give voice to students, thereby acknowledging their role as key stakeholders in their own success, and to offer IT administrators and instructors insight into how they can best leverage technology to enhance student success.

This report presents findings from students’ open-ended responses gathered in 2017 on the “one thing” that their institution and instructors could do with technology to enhance their academic success. These responses enabled students to offer insight into their most pressing IT needs. We first present student responses on what their institution could do, followed by what their instructors could do; we conclude with recommendations based on these responses. We present open-ended findings based on the categories of coded responses. Although not all students provided detailed responses, we offer illustrative quotes reflective of these categories.

It should be noted that many students in the study did not provide open-ended responses; therefore, this report reflects the views of a smaller number of students than the overall number in the study sample. Nevertheless, virtually all respondents chose to voice concerns and offer suggestions as to how technology could assist them in their academic success. To provide context to these responses, we refer to survey findings from ECAR Study of Undergraduate Students and Information Technology, 2017.
Key Findings

- **Students want their institutions to increase the reliability, speed, and strength of Wi-Fi in student housing, all campus buildings, and outside areas.** We do know that a majority of students reported good or excellent experiences with Wi-Fi in libraries (76%), classrooms (68%), and general indoor public spaces (61%). However, almost half of students reported subpar experiences with Wi-Fi in outdoor spaces, and a third reported fair or poor experiences in dormitories. Student open-ended responses primarily focused on challenges with connectivity in housing and outdoors as they walked from building to building.

- **Students want training and support in the use of technology to enhance their academic success.** Although in 2017 a majority of students (76%) agreed or strongly agreed that they were prepared to use productivity software (e.g., MS Office), fewer students (44%) agreed or strongly agreed that their institution had prepared them to use institution-specific technology. Student open-ended responses reflect a desire for training in both productivity software and institution-specific technology, such as registration systems and the LMS.

- **Students want their institutions to enable the use of more technology, especially the use of devices in classrooms, instructor use of technology, and increased library resources.** Students were not often explicit in their statements regarding this theme: they stated most often that they simply wanted “more” technology to be used. When offering specifics, students reported that they wanted to be able to use their laptops in class and disagreed with instructors’ “no laptops” policies. Some students reported that their laptops were crucial to their note-taking efforts.

- **Students reported that their academic success would be enhanced if their instructors used their institution’s LMS to post lectures, course content, and grades/feedback.** Students want their instructors to use the LMS’s functional, operational components to help them succeed academically: posting audio or video of lectures provides the opportunity to review in-class content; posting course materials creates efficiencies for quickly finding materials for class preparation and review; providing feedback and posting grades helps students assess their current standing and adjust their approaches to learning in order to succeed.
What Students Want from Their Institutions (In Their Own Words)

Students are arguably the single most important group of end users of the technologies that IT units develop, implement, and/or support. In 2017, more than three-quarters of students reported having either good or excellent overall technology experiences. Fewer than 10% of students reported that overall their technology experiences were negative. Even with these generally positive reports, students’ open-ended responses reflect specific issues related to their technology experiences, such as challenges with networks, as well as more general desires for increased use of technology.

We categorized students’ open-ended responses into themes based on what their institution and instructors could do with technology to enhance their academic success. The most prevalent themes were:

- Institution—providing reliable Wi-Fi across all areas of campus
- Institution—providing technology training and support for students
- Institution—increasing the use of technology in classrooms and on campus
- Faculty—more frequently and consistently using their institution’s LMS to post lectures, course content, and grades

Overall Results

In figure 1 we present students’ most frequently reported “one thing” that their institution could do with technology to enhance their academic success. Fourteen percent of students didn’t answer, reported that they did not know, or indicated that the question was not applicable to them.
Figure 1. What institutions can do with technology to enhance student academic success

Reliable Wi-Fi on Campus: Faster, Stronger Connections That Are Consistent across Campus

Students’ overall experience with technology on their campuses is, in part, a function of their interactions with the wireless infrastructure and campus networks. The good news is that in 2017 a majority of students told us they had good or excellent experiences with their institution’s Wi-Fi in campus libraries (76%), classrooms (68%), general indoor public spaces (61%), and dormitories and student housing (51%). However, almost half of students reported subpar experiences in outdoor spaces, and nearly one in three students reported fair to poor experiences with dormitory Wi-Fi (32%) and network performance (30%) (see figure 2).
Similarly, students’ open-ended responses primarily reflect challenges in institutional Wi-Fi in outdoor spaces and dormitories. These responses suggest that for some institutions, campus technology infrastructure is not providing “ubiquitous and frictionless access” in a BYOE (bring your own everything) campus environment. Student responses reflect general concerns about their institution’s Wi-Fi as well as concerns specific to access, strength, speed, and connectivity with mobile devices.

Although many students offered general complaints about their institution’s Wi-Fi, such as weak signals, they also pointed to specific examples of how Wi-Fi access affects their academic success. Inconsistent Wi-Fi access was reported as impeding the ability to complete coursework:

I highly recommend that the Wi-Fi be upgraded. There have been many instances when I am completing an exam/quiz and it disconnects. There are also times when my laptop/phone doesn’t connect at all.

Another student reported that the institution should “improve its atrocious Wi-Fi, whose frequent unreliability impedes online class participation or assignments.”

A student reported how difficulties with Wi-Fi were also interconnected with general IT support challenges within the institution:

I’m in a computer lab for three of my classes, and half the computers never work or connect to internet. IT seems apathetic to fixing any of the problems. Improvements to Wi-Fi, computer labs, and Blackboard need to be made because often they are useless.
Students also reported that logging in to their institution’s Wi-Fi service and changing Wi-Fi passwords is not user friendly.

Among the specific comments about wanting more reliable Wi-Fi, a little more than half cited specific issues with the respondent’s institutional Wi-Fi. These subthemes may offer an explanation for why one institution’s network was characterized as “awful,” even as a majority of students at other institutions reported good or excellent experiences with their institution’s Wi-Fi. The most frequently reported concerns with Wi-Fi centered on its availability across all areas of campus, followed by a desire for stronger and faster connections and ease of login across multiple devices.5

- Wi-Fi should be reliably and consistently available across all areas of campus, including dormitories, campus buildings, and outside.
- Wi-Fi should be stronger and faster.
- Wi-Fi should be easier to sign in to across multiple devices and without multiple logins necessary during the day or month.
- Wi-Fi bandwidth should be able to adequately accommodate periods of high use.
- Wi-Fi costs should be lower, or students should have discounted Wi-Fi off campus.
- Wi-Fi security measures should be improved.
- Wi-Fi usage should have fewer restrictions.

A student shared the challenges of Wi-Fi not being available outside: “Make Wi-Fi more accessible in all areas. Sometimes I lose Wi-Fi walking from one building to the next, and therefore lose the web pages I was on.” A few other students commented that specific buildings had poor connections or no signals in parts of the buildings (e.g., basements). Many student responses regarding Wi-Fi reliability suggested improving already existing services along with network speed and strength. A student commented that intermittent access to campus Wi-Fi increased reliance on wireless providers: “My phone constantly has to switch on and off of Wi-Fi due to lack of connection, which uses a lot of my data.” Some students reported that login procedures were not user friendly: “When it’s time to change the Wi-Fi password (connected to my institution’s network), the student shouldn’t be shut out of the Wi-Fi until the password is changed.”

In 1981, students wanted their MTV. In 2018, students want reliable Wi-Fi. Everywhere. There has been a shift in student perception: the wireless network is seen as the “real network” rather than as a “network of convenience.” This shift is likely attributable to “consumerization of enterprise IT.”6 Consumerization has increased student expectations that the activities supported by private network connectivity or public spaces (e.g., restaurants, shopping malls) across multiple
devices should be similarly supported on their campus. In 2017, 64% of students told us that they live off campus. It is likely that when these students come to campus they expect the same level of connectivity that is available in public spaces and in their homes.

Students not only attend classes and conduct their work of being students on campus, but many also work and live on campus. The 36% of students who live on campus expect to have reliable networks available in their dormitories. Students may have decreased distinctions between school, work, leisure, and home domains, which results in expectations of a seamless flow of network connectivity from the campus library to the classroom, outside on campus grounds, and inside coffee shops, nonacademic campus buildings, and dormitories. After studying all night in the library, binge-watching a television series may be as viable an option for stress relief as any other. Students may also rely on their dormitory’s network reliability to complete assignments and activities online, including research (which may involve streaming content) or simply registering for courses. Rather than viewing such options as a “frivolous” use of bandwidth, students perceive ubiquitous networks as essential to their lives. Institutional administrators may not relish the fact that students perceive themselves as consumers (of education), but often this is the case, particularly when they are paying technology fees. Engaging in this customer–provider relationship increases expectations among students for reliable and prevalent connectivity.

A few students reported that private routers in dorms decrease the efficiency of Wi-Fi networks in dormitories: “Improve the Wi-Fi. Find people who bring private routers and fine them a large amount because it messes with the Wi-Fi and makes it even worse than it already is.” Widespread use of personal routers downgrades the available Wi-Fi. Additional tasks, such as online gaming and accessing wireless printers, also pose challenges for Wi-Fi networks in dormitories. When students report poor Wi-Fi in dorms, it may be the result of a perfect storm of personal routers, wireless printing, online gaming, and networks without the capacity to support all of these network-intensive tasks, let alone online exam-taking.

Student expectations are all the more important to acknowledge given the increased student ownership of smartphones (97% in 2017) and the percentage of students (78% in 2017) reporting that their phones were at least moderately important to their academic success. These findings reflect that students expect “ubiquitous and frictionless” network experiences across all domains of their lives and across all devices. This also suggests that students are likely using their smartphones across campus—academic and nonacademic buildings, dormitories, libraries, gyms, outdoors, parking lots—and expect to be able to quickly review their LMS, email their instructor, download a syllabus, or register for a course.
Students’ assessment of their institution’s network performance (e.g., high speed, no interruptions) is significantly and strongly associated with their ratings of Wi-Fi access across campus. Students who assessed network performance as poor or fair also assessed Wi-Fi in the dorms and outside as poor or fair. This offers some insight into more general student complaints about network performance. Poor network performance in dormitories or outdoors around campus may be the source of this general dissatisfaction. Student expectations of network performance extend to all areas of their lives on campus, not just to where studying and learning traditionally take place—the library or classroom. This reflects a continuing consumerization of enterprise IT, decreasing distinctions between work and leisure time, and increased student expectation that campus networks will be as reliable as those in their homes, coffee shops, or airports. With the near-universal use of mobile devices on campuses, student expectations will likely only increase in scope. Ensuring this frictionless experience of connectivity across student life domains reflects the view that student success is a result of the entire student experience, not just degree completion rates. This student-centered, holistic approach to student success applies technology to the student’s experiences inside as well as outside the classroom. That means that expectations of IT are expanding to include technology’s contribution to all aspects of students’ experiences, in addition to academic success. Students’ experiences are not solely understood in terms of the classroom. Rather, the entire amalgam of student characteristics—commuter, dorm resident, registrant, learner, Wi-Fi user—is considered when strategically leveraging IT for student success.

Receiving Institutional Training and Support

A majority of students told us that they agreed or strongly agreed that they were well prepared to use productivity software programs (e.g., MS Office, Google apps, etc.) when they started college. However, many students reported in open-ended responses that they would like to receive institutional training in productivity software programs (such as MS Office) and institution-specific technology. Students also requested online support for their technology needs. Student responses appeared to reflect an availability of technology at their institution, but they faced challenges in learning how to effectively use the technology that was provided to them.

Very few students reported needing security training or training in basic skills, such as typing. Students did report, however, that they would like to have training in how to use MS Office programs, such as Excel: “Hold a short and very basic Microsoft Office workshop each semester.” A student reported that because he did not know how to utilize MS Office software, completing an assignment was challenging:
Make sure to explain how a certain part of a project works, such as Microsoft Excel. I had a project this semester that revolved around making graphs with Excel, and I didn’t know how to use it. It took forever to learn despite the fact that doing the project actually was not that difficult.

Several students suggested that their institution could enhance their academic success by providing online tutoring for their classes or marketing existing services in an effective manner. Some students reported they needed training on analytic software and computer use. For example, a student reported:

I wish it was easier to learn new technology and easy to find out how/where to learn. I’ve discovered a lot of classes have projects with software like Excel or SAS or LaTeX, but you don’t know that til [sic] you actually take the course. It’s not info that is available when looking through a catalog, and there is very little titled “A Class on SAS” to make it obvious.

A student who reported being quite familiar with productivity software offered an explanation for why training could assist incoming students:

Offer a course in how to use programs such as Excel and Word. I know how to use everything, but when every class we have [has] to go over how to use Excel and PowerPoint it gets repetitive and I don’t see how that is helping me personally. I took a Microsoft course in high school; I do not need to spend hours now essentially taking that course again because people don’t know how to make a graph in Excel. A course should be offered or mandatory for those who are not familiar with Microsoft applications.

Slightly fewer than half of students (44%) told us that they agreed or strongly agreed that their institution sufficiently prepared them to use institution-specific technology when they started college. Open-ended responses reflect students’ desire to have training and support for navigating their institution’s websites and technology infrastructure. These responses suggest an additional challenge beyond solely becoming fluent in productivity software: they point to a challenge in effectively getting critical tasks completed through university websites. A student reported, “The process of learning how to work the online programs is not well taught. Things such as signing up for classes and finding what fees are owed are very hard with the current setup.” Students also identified a need for training on how to navigate their course’s LMS: “Make learning how to use Blackboard/SIS part of orientation. It took a couple weeks [to learn].”

A student shared the stresses of not being able to effectively navigate registration for courses:

Help freshmen understand how to sign up for classes and how to use Blackboard and SIS. I am a sophomore and it’s been almost 2 years since I went through that experience, and I still remember how horrible and stressful it was to not
understand what my major was, what classes were available, and how to sign up [for classes]. They made us do it all alone without having ever met our advisor, and they should have allowed us to do it during orientation week.

More Technology Use at Their Institutions

A majority of student respondents also voiced their desire to have increased access to and institutional use of technology in their classrooms and libraries to enhance their learning. Only a few students offered specifics on how they wanted to have technology incorporated into their classroom experiences. A student provided an example of how rigid “no technology” classroom policies for students are and how instructors’ limited use of innovative technology tools (e.g., use of videos) affected their academic performance:

I think the institution should prohibit professors from having “no technology” policies. I personally can take notes much faster by typing than I can writing by hand. My success depends on that. I also think having more “real life” assignments, such as having students watch TED talks, listen to speakers and podcasts, etc., and then having them recall that is critical to ensuring success not only academically but [also] for students’ lives outside of the classroom. I think technology could enhance learning in many ways.

This quote reflects the student’s desire to use a laptop in class. However, such use is not widely embraced among faculty. From 2015 to 2017, there was an increase in instructors encouraging or requiring students to use laptops in class, although 20% of students still reported that laptop use was banned or discouraged. One student suggested, “Actively create classes with more technology used as a learning tool.” Another student observed:

Instructors should be less technophobic. Embrace the fact that students can use them [laptops] for productive purposes. Just be sure to walk around every once in a while to weed out the ones that are irresponsible with it. Stop telling us we can’t take notes on our laptops ... for some of us this is the most efficient way [to take notes].

Although there has been an increase in student reports of classroom policies prohibiting laptops, only a quarter of students reported using laptops to engage in nonclass activities during class. In 2017, students reported that laptops were the device used most for coursework and were also rated as most important among all devices to their academic success. Half of students reported that they use laptops to make other connections with the learning materials, and nearly half reported that they use their laptop to take notes.

Given the near universal use of laptops and students’ assessment of their importance, the manner in which laptops are used to take notes may actually
hinder a deeper understanding of lecture content. For example, if laptops are being used to take verbatim notes (i.e., transcribing instructor lectures) rather than to actively understand content (i.e., noting points for later consideration), this may not contribute as much to student learning. This suggests that although students want to use more technology in the classroom and report that it is crucial to their success, they may also need help effectively using this technology, or they may need to improve their note-taking and study skills. Rather than an either-or approach to mobile device use, strategies that incorporate the use of technology in the classroom should be well thought out and based on empirically informed pedagogy that enhances student engagement and learning.

Students also wanted their institution to better equip their libraries with technology. One student suggested that the institution should use the most current technology: “I would like my institution to invest in the most advanced equipment and resources in order to keep its students in touch with how the world is advancing.” A student specifically discussed, for example, how introducing students to recent technology, such as Skype, would be beneficial: “Let us interact with it [technology] more to educate ourselves. Introduce us to new technology and let us test it, as we aren’t likely to try it on our own. For example, set up Skype with students abroad in a language or international relations class.” Students also suggested more use of learning games, in-class polling, clicker questions, Kahoot!, Makerspace, 3D applications, video-editing classes, and opportunities to engage with robotics.
What Students Want from Their Instructors
(In Their Own Words)

The choices instructors make about using technology in their teaching shape students’ overall technology experiences. In 2017, a majority of students (65%) told us that most, almost all, or all of their instructors use technology adequately for instruction; 55% said that most or all instructors use technology during class to make connections to learning material or to enhance learning with additional materials. When it comes to instructors’ use of technology, students want more use of technology that offers practical solutions for the business of being a student.

The top three technologies that students told us they wanted instructors to use more were lecture capture; free, web-based content to supplement course-related materials; and early-alert systems designed to catch potential academic trouble (see figure 3). Students want their instructors to use technology that can assist them in accessing information (e.g., grades) or completing tasks (e.g., studying or submitting assignments).

![Figure 3. Technologies that students would like their instructors to use more (and less)](image)

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These types of functional tasks are most often conducted through an institution’s LMS, the technology that is most widely used and available for teaching and learning. The majority of students are satisfied or very satisfied with the course management functions of their LMS, and they want their instructors to use these operational, functional components more. Similarly, the majority of students’ open-ended responses reflected a desire for their instructors to use their LMS for these functional tasks. Open-ended responses also provided insight into why students want their instructors to use lecture capture, web-based content, and early-alert systems to enhance academic success.

In figure 4, we present students’ most frequently reported “one thing” that their instructors could do with technology to enhance their academic success.15 Seven percent of students didn’t answer, reported that they did not know, or indicated that the question was not applicable to them.

Figure 4. What instructors can do with technology to enhance student academic success

Student responses reflect a desire for their instructors to use the available technologies that have clear and immediate benefits to assist students. A majority of students reported that they wished their instructors used more lecture capture and free web-based content to supplement course-related materials. Students want instructors to use the capabilities of their institution’s LMS for a more
A blended approach to instruction. Additionally, students wished their instructors used more early-alert systems designed to catch potential academic trouble. The following operational course management functions of the LMS assist students in their academic work: access to lectures, PowerPoint presentations, and instructor notes before and after instructor presentations; posting syllabi and other relevant course information; posting course content to enhance learning; and access to updated grades in the LMS gradebook. This desire to harness the potential of the LMS also reflects an anytime, anywhere perspective on the learning environment—the classroom (and its content) as a mobile learning space that is accessible 24/7.

**Post Lectures and Course Content Online**

Students want access to course lectures and course materials in a way that suits how they consume content; this means unrestricted access via devices, and available anytime and anywhere. Students requested that lectures be recorded and posted on the LMS so that the audio (or video) and/or lecture notes could be reviewed later, thereby increasing their understanding of course content. Many students saw the use of the LMS as enabling continued access to instructors’ comments and expertise, which was viewed as a valuable study tool for their success. A student remarked, “Post lectures online. It is sometimes difficult to be able to write all your notes down when your professor is lecturing. It would be nice to be able to go back to your lectures whenever you need it.” Another student suggested that transcriptions or video recordings of lectures could be posted on a public platform, such as YouTube: “I would extremely enjoy the lectures recorded and put onto a medium such as Blackboard or, failing that, YouTube. If not that, then perhaps record the lectures, then put a typed transcript of the lesson onto a medium such as Blackboard.” A student stated that technology can be used to ensure class attendance even if lectures are posted online: “It personally does not deter me from attending class, because there are attendance ‘clicker’ points.”

Students also reported that they would like instructors to use technology more often in lectures to enhance interactivity within the classroom:

> Learn how to properly navigate materials available to them. This requires more work put into lectures to make them more interesting: research videos, make a Prezi, interactive polls, interactive learning games. Not just PowerPoint slide after slide. If attention levels are dropping already, imagine what the next generation’s will be like.

Another student’s comments also suggested that using technology in lectures can enhance student engagement and interest in course content:

> I would like to see more polls or some sort of interactive program that engages people. I find myself sometimes drifting off into space when it is nonstop talking
for 50 minutes, 1 hour and 15 mins, or even a 3-hour lecture. I just think if there were some sort of engagement of student-to-lecture application, it’d help people stay more attentive.

Another student suggested that using lecture capture could also free up class time for more interactive learning opportunities:

I wish the lectures were recorded and put online for me to view at my own pace. I always feel like they have to go so fast in class, but if we’d already watched the lectures then we could attend class and just ask questions or do activities to deepen the understanding. I think this is called a flipped classroom style.

These quotes indicate that students want less of the “sage on stage” (i.e., lecturing) and more of an active learning environment. Students also reported that posting course content such as instructors’ lecture slides, syllabi, or assignments would benefit them in their classes. A third of students who requested that more course content be posted online specifically mentioned that they would like to see instructors’ lecture slides and notes posted on the LMS. Students reported that they would like to have these resources to review prior to and after class, reflective of a “shared content” perspective whereby information is freely available from students’ devices. A student remarked, “I would like them to utilize technology to our benefit, allowing coursework to be viewed online.” Another student suggested, “Post everything online. If you give us the information in class and I missed something, I want to be able to reference it or come back to it so I don’t miss anything and I do well in a course.” A few students reported that having assignments online (to prereview) as well as syllabi would assist them in being more prepared for the course. For example: “I would like all of my instructors to consistently use Moodle, either to post the syllabus online or to post weekly assignments online. This way, you can always access them and plan in advance!”

Four-fifths of faculty told us in 2017 that they were satisfied or very satisfied with creating or posting content in the LMS; this was also the second most-used feature of the LMS. However, student responses suggest that some instructors may not be posting the content that students feel would contribute to their course performance, such as lecture slides or notes. A student observed that instructors are inconsistent in posting course content via the LMS: “Utilize all features of WebCampus [an institution-specific LMS]. Most of them use some features. A couple use it better than others, and some professors are still unwilling to accept technology use and don’t post anything online. It’s ridiculous.”

A majority of students are satisfied or very satisfied with the functional, operational aspects of their LMS and want their instructors to use these features to enhance their academic success. Students indicated that these functional aspects of their LMS—those that assist them in the business of being
students—are the features they wished instructors used more. These include posting syllabi or other course administrative information. Students want ongoing and unrestricted access to instructors’ lectures, notes, and commentary on course content as well as course information and supplemental course content. Some students suggested that this access would free up class time for active learning experiences. Instructors and learners can benefit from and appreciate the active learning experience.\textsuperscript{19} This is likely why students and faculty give a similar reason for conducting particular assignments and activities (e.g., quizzes, homework) online: increased class time.\textsuperscript{20}

It should be noted that lecture or PowerPoint presentations and active learning environments are not mutually exclusive. For example, the Active Learning Platform allows students to ask and answer questions, take notes, and indicate need for clarification during presentations.\textsuperscript{21} This type of technology may be well suited for instructors seeking to engage in active learning in larger classes.\textsuperscript{22} Each student action is linked to the spot in the lecture video (if available) where the action was taken, for all the class to observe. The Active Learning Platform allows the instructor to monitor and answer questions from students during or after class, and data on student participation can be downloaded on a class-by-class basis. This provides the instructor with information on what students are doing while in class as well as online.

A student’s response reflected a perception that instructors avoid posting materials online so as to encourage attendance: “I wish that instructors would make all information available in class also available online. Withholding information isn’t an adequate method to encourage attendance.” What are students’ perspectives on the relationship between attendance and instructors’ delivering content via the LMS? Forty-two percent of students disagreed/strongly disagreed that they were more likely to skip face-to-face classes if streamed or recorded lectures were available online. Conversely, 38% of students agreed/strongly agreed that they would skip classes if streamed or recorded lectures were available online. Slightly more students (45%) disagreed/strongly disagreed that they were more likely to skip face-to-face classes if materials presented in class were available online, compared with 34% who reported they would skip class if these materials were available. The percentage of students (little more than a third) who said they’d skip may reflect what is happening during class time. Instructors may be using class time primarily as a means to communicate course content (via lectures and lecture slides) and to provide time for in-class discussion. If this is the case, then it makes sense for a third of students to report they’d not attend classes if what they primarily experience in class is the same as what they can obtain online, i.e., PowerPoint slides.

This shared preference among students and faculty for increasing class time (by posting content, activities, and assignments via the LMS) to engage in
active learning suggests that students and faculty are likely open to a blended learning environment that lends itself to a flipped classroom. Student and faculty preferences for LMS utilization reflect a partiality for blended learning environments, where online and face-to-face components are both used for teaching and learning. Blended learning environments have been demonstrated to be more effective than either online only or face-to-face only environments. Student responses indicate that increased use of the functional, operational elements of the LMS can enhance their academic success.

The flipped classroom enhances student experiences by placing more of the responsibility for learning on students while allowing them room to experiment with course ideas and concepts. The flipped classroom also enables the instructor to be present and to offer guidance for students during active learning exercises. The available class time in a flipped learning environment can then be used for discussion, collaboration, student engagement in higher-order thinking tasks, and the application of skills to complex problem-solving exercises.

Although posting online content and lectures offers opportunity for the blended, flipped classroom, it still uses the LMS as a course administration system rather than a learning tool. Indeed, students are less satisfied with the more complex system functions of the LMS than with its basic management features, such as accessing course content. The lower satisfaction with the more complex LMS functions may be the result of LMS limitations.

Rather than a management system, a digital learning environment that enables customizable, student-centered interactive components is needed. These next generation digital learning environments (NGDLEs) are not single applications, like an LMS. NGDLEs can include personalization; interoperability; collaboration; accessibility and universal design; and analytics, advising, and learning assessment. NGDLEs may or may not include an LMS among their components; the LMS may be used solely as a supplement to these open-standard digital applications, tools, and resources. Students’ open-ended responses, along with their lower satisfaction with the more complex features of their LMS, suggest that students may be open to the more interactive and collaborative opportunities offered by an NGDLE.

**Post Grades and Feedback Online**

Knowing is half the battle. The more students know, the more they can assess their progress in their courses and respond accordingly. A student reported, “There are classes where I have no idea what my grade is.” This student experience reflects the exact opposite of what we know is best for student (and instructor) success. Ongoing instructor feedback (i.e., formative feedback) regarding performance can enhance student success and allow students to make
adjustments during the course to improve performance. Ongoing assessment and feedback also allows instructors to adjust their approaches to improve students’ outcomes.

Students want grades posted in a timely manner, which they believe would enhance their academic success. A student reported that being able to consistently review grades online enables tracking performance in the course: “I would like ALL instructors to be required to post grades online. It’s hard to figure out where you stand in a class or what you need to make on a final to keep a certain grade when they keep this information to themselves.” Often, students requested posting grades and feedback so that they can know exactly where they stand in the course. It also allows them to review specifics on what instructors identify as needing improvement: “Grade assignments online and comment on [why] they take points off [in assignments and assessments]. Not all professors do this, and it saves a lot of time to just see it online rather than having to wait in a line of 10 people to see what I got points off for.” Another student remarked that having this real-time access would enable altering study habits to ensure success: “I would like my instructors to allow me better access to my most up-to-date grades online so that I know how I am doing in the course, and if I need to change my study habits or hours devoted to that course.” Many students reported that their instructors use their LMS to post grades, but frequently the most current grades are not posted. As the previous quote indicates, knowing grades throughout the term rather than just during the last month of the course may be one of the key advantages students allude to in their responses.

Instructors’ use of an LMS to update grades weekly may benefit students who are struggling or unsure of their current, calculated grade during the term. Although not all students provided deep explanations for why they want their instructors to post online grades, many reported that knowing their standing in a course (via the course LMS) throughout the term enhanced their academic success. A student suggested that the LMS could accurately track grades but felt that instructors needed to better use the available technology: “Learn how to use Canvas. They [instructors] always claim it doesn’t ‘do the grades correctly,’ but in reality Canvas can do drops, minimum scores, curves, grade weights, categories. The professors just don’t know how to use it.” This last comment suggests that instructors may not know all the features available in their LMS gradebook, and additional opportunities for instructors to learn how to leverage its capabilities could enable the real-time grade-posting students desire.
Student Success and the LMS

Students’ desire for the LMS to have up-to-date grades aligns with higher education institutions’ current strategies to enhance student success.* The LMS is an important tool to help instructors and student support staff flag students who are not engaging in courses or who are at risk of not completing a course. This early-alert system can not only notify instructors and support staff but also be used to link a student to an intervention. For example, a writing assignment completed through the LMS that receives a low grade could send an electronic message prompting that student to make an appointment at the writing center. The LMS gradebook data can then be used to monitor progress after the student engages in the intervention (writing center appointment), which can inform macro-level analytics on which interventions are working best (or not) for which students. By harnessing the LMS data, staff and administrative stakeholders can more accurately assess which students need interventions, who benefits from which interventions, and whether these benefits carry over to other courses. Knowing is half the battle for students; use of the LMS real-time grade functions can ensure that stakeholders who have decision-making power are also “in the know.”


Students’ responses reflect the need for real-time grade information that identifies whether they are at risk in any course they are presently taking. Empirical research suggests that access to the LMS gradebook can benefit student performance. Instructors who used the grade center in their LMS reported that their students were more likely to earn a C or better. Freshmen with high LMS activity in the grade center were up to three and a half times more likely to earn at least a 2.0 GPA.
Conclusion

Students want different things from their institutions and instructors, but one thing is clear from their open-ended responses: students want more technology use that aids them in their work of being students and enables them to succeed in their academic work. The main finding from what students want from their institutions is reliable, strong, and more consistent Wi-Fi networks in dormitories and outside. Although a majority of students reported they were prepared to use productivity software on their entry to college, students also requested some training and support on using the MS Office suite and other software applications. Students also requested training and support in using institutional websites, particularly for crucial tasks such as course registration. Although these responses were often not specific enough to identify clear areas for recommendation, some students took advantage of the opportunity to request that their instructors allow increased application of technology—such as laptops—in the classroom. Yes, students want more use of technology. However, a more strategic means to enhance student success is supporting students in effective use of technology. More effective transcends more.

A positive finding from what students want their instructors to do with technology is that it aligns with what we know works for student success. Students primarily want instructors to post lectures and course content online so that they can review lectures, expand the array of study materials available, and identify key insights from instructors. Although students did not use terms such as “blended learning,” “flipped classroom” (well, one student did), “early-alert systems,” or “analytics,” their open-ended responses for what their instructors could do with technology aligned positively with how higher education assessments are changing. Students recognize that posting lectures, notes, and other didactic materials online would free up valuable face-to-face time for more hands-on, experiential, or active learning activities in the classroom; that students’ preferences align so well with research on the impact of blended learning and the flipped classroom model is compelling. Additionally, students want their instructors to keep their grades updated in their LMS so that they know where they stand in class. Again, the alignment of student preferences with research about the impact of frequent formative assessments to improve student learning outcomes is noteworthy.
Recommendations

- **Institutions should prioritize investments in reliable, high-speed Wi-Fi networks across all areas of campus and ensure that students can use their devices (not just laptops) on their institution’s network.** Student ratings of their institution’s wireless network performance are highly correlated with positive experiences of technology. Students expect that they will be able to rapidly and consistently connect all of their devices to a reliable and consistent Wi-Fi network across all areas of campus. Although students generally report positive Wi-Fi experiences, our findings suggest that dissatisfaction with institutional networks may stem from poor connectivity in dorms and outside. Additionally, our findings provide IT administrators a checklist of possible reasons why students may report general concerns about Wi-Fi, so that IT can better meet student expectations on ubiquitous and frictionless networks. This checklist of probable Wi-Fi challenges can assist institutions in proactively identifying students’ pain points in network use. Appendix C contains a checklist of possible challenges with Wi-Fi networks when students report general concerns of “poor Wi-Fi” on campus or in dormitories.

- **Institutions should assess incoming students’ technological literacy and fluency.** Although many students reported possessing the technology skills needed to use general applications as well as institutionally specific ones, not all students have had exposure to these tools and may find themselves in need of basic training on how to use them. Institutional assumptions that students are fluent with the technologies necessary for academic success may disadvantage first-generation and nontraditional students. Institutions can respond to the varying level of technology literacy by providing courses, workshops, orientations, trainings, and ongoing support to promote academic success.

- **Institutions should assess usability of their institutional websites, including their LMS, to ensure their design aligns with what we know works for enabling users to rapidly access information.** Institutional websites can often be more navigation-heavy than content-heavy. This makes it challenging to rapidly navigate the site via a mobile device and access information, register for classes, or check the LMS. Institutions should seek to create sites that are intuitive, content-heavy (with easily accessible menus), and aimed at users of mobile devices, particularly smartphones. Additionally, institutions should consider more intensive training or workshops to help incoming students use critical institutional websites, such as online registration and SIS.
Institutions should increase efforts to incorporate more technology to enhance academic success. Students clearly want current and reliable technology incorporated into their campuses and their courses, as well as access to technology to enhance their academic success. Institutions should maintain and increase their integration of technology into their infrastructure and culture by:

- Creating a strategic plan for investing and incorporating technology to enhance academic success. Identify stakeholders, responsibilities, and benchmarks that make sense in the context of an institution’s capacity and resources.
- Encouraging faculty experimentation with technology. Offer spaces such as workshops and peer-led training to enable faculty to learn about and practice technology integration.
- Conceptualizing technology integration as a long-term investment. Aim to shift perception of technology investments as a means to increase and sustain student success.
- Identifying empirically grounded approaches to incorporating technology. This opens opportunities to question “the way we’ve always done things” and identifies “what can we do” with “what we know works” in order for institutions to integrate technology to enhance student success.

Institutions should help faculty determine how to strategically use their institution's LMS. Frequently updating grades via the LMS has been demonstrated to contribute to student success; it can also contribute to informing student support services and institutional analytics and can assist instructors in making midcourse corrections. Leveraging the LMS to create rich and engaging blended learning environments not only supplies students with the learning environments they demand but also aligns well with research that suggests blended learning is superior to environments that are either face-to-face only or online only. Finally, simply posting course content and class documents online goes a long way toward supporting student success by giving them what they need to take charge of their learning experiences and outcomes. Assisting faculty in leveraging the resources of the LMS can also include collaborative peer workshops that engage faculty in identifying what works and offering suggestions on best practices from faculty experienced in integrating the LMS into their courses.
Students want to succeed, and to assist them higher education institutions are embracing a holistic conceptualization of student success that includes students’ experiences and needs. Students want their institutions to provide reliable, user-friendly technology and to offer ways to learn how to effectively use the technology provided. Students also want their instructors to leverage the functional, operational aspects of the LMS in ways that have been shown to positively affect student outcomes. By giving voice to students’ technology needs, we show a strong alignment between what students want and what institutions know students need for their success—and a rewarding education experience.
Acknowledgments

Many thanks are due to the EDUCAUSE staff who made this report possible. Specifically, we want to acknowledge the contributions of Eden Dahlstrom, Susan Grajek, and Mark McCormack for their thoughtful and thorough feedback on multiple drafts of this report. Additionally, we want to acknowledge the statistical support we received from Ben Shulman and the data visualization contributions of Kate Roesch. Thanks also go to Jamie Reeves for overseeing the project timeline. Gregory Dobbin expertly provided editorial reviews.

Lastly, we want to thank the 43,559 student respondents who completed the 2017 EDUCAUSE Technology Research in the Academic Community (ETRAC) Student Survey. Without the data they provided, this and other ECAR reports on student and information technology would not be possible.
Appendix A: Frequencies of Coded Student Responses—Institutions

Below we present the frequencies of codes for students’ open-ended responses to the following question: “What is ONE thing you would like your institution to do with technology to enhance your academic success?” Percentages do not add up to 100%, due to independent rounding.

<table>
<thead>
<tr>
<th>Definition</th>
<th>N</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students request that institutions provide more reliable Wi-fi services</td>
<td>189</td>
<td>19</td>
</tr>
<tr>
<td>Students request training and support to use technology (e.g., analytic software)</td>
<td>90</td>
<td>9</td>
</tr>
<tr>
<td>Students request that institutions utilize more technology on campus</td>
<td>65</td>
<td>7</td>
</tr>
<tr>
<td>Students request that institutions have more user-friendly websites (e.g., registration)</td>
<td>47</td>
<td>5</td>
</tr>
<tr>
<td>Students request that institutions provide more access to hardware (e.g., laptops that can be loaned out)</td>
<td>43</td>
<td>4</td>
</tr>
<tr>
<td>Students request improvements in campus LMS</td>
<td>43</td>
<td>4</td>
</tr>
<tr>
<td>Students request that their institution facilitate the posting of all grades online</td>
<td>39</td>
<td>4</td>
</tr>
<tr>
<td>Students request that institutional technology (e.g., websites, LMS) be more user friendly</td>
<td>39</td>
<td>4</td>
</tr>
<tr>
<td>Students request that their institution utilize more mobile apps</td>
<td>37</td>
<td>4</td>
</tr>
<tr>
<td>Students request that their institution offer more online courses</td>
<td>35</td>
<td>4</td>
</tr>
<tr>
<td>Students request that their institution’s technology be more reliable (e.g., LMS)</td>
<td>30</td>
<td>3</td>
</tr>
<tr>
<td>Students request that institutions make their instructors’ lectures available online</td>
<td>29</td>
<td>3</td>
</tr>
<tr>
<td>Students request that their institution have policies that allow laptops and smartphones in classrooms</td>
<td>28</td>
<td>3</td>
</tr>
<tr>
<td>Students request that their institution have less reliance on technology</td>
<td>28</td>
<td>3</td>
</tr>
<tr>
<td>Students request that their instructors use technology better</td>
<td>26</td>
<td>3</td>
</tr>
<tr>
<td>Students request that their institution update or upgrade technology used on campus</td>
<td>26</td>
<td>3</td>
</tr>
<tr>
<td>Definition</td>
<td>N</td>
<td>Percentage</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------</td>
<td>----</td>
<td>------------</td>
</tr>
<tr>
<td>Students request that their institution utilize (or better utilize) technology for academic planning and auditing</td>
<td>25</td>
<td>3</td>
</tr>
<tr>
<td>Students request that their institution and instructors provide more effective electronic communication (e.g., campus events, and communication from instructors)</td>
<td>25</td>
<td>3</td>
</tr>
<tr>
<td>Students request that their institution post course content online</td>
<td>20</td>
<td>2</td>
</tr>
<tr>
<td>Students request that their institution provide free access to software</td>
<td>17</td>
<td>2</td>
</tr>
<tr>
<td>Students request that their institution offer e-books for lower costs and increased convenience</td>
<td>17</td>
<td>2</td>
</tr>
<tr>
<td>Students request that classrooms be more adaptable to use of technology (e.g., outlets, smartboards, etc.)</td>
<td>12</td>
<td>1</td>
</tr>
<tr>
<td>Students request that their institution provide online exams and quizzes more often</td>
<td>11</td>
<td>1</td>
</tr>
<tr>
<td>Students request that their institution ensure that more videos are incorporated in course content</td>
<td>10</td>
<td>1</td>
</tr>
<tr>
<td>Students request that their institution provide free hardware as a service (e.g., free laptops)</td>
<td>9</td>
<td>1</td>
</tr>
<tr>
<td>Students request that their institution increase efforts to communicate what resources are available to students</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>Students request that their institution improve online courses (e.g., more interactive online course content)</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Students request that their institution improve support and use of Mac software/hardware</td>
<td>3</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Students request that their institution provide data on course/instructors’ student assessments</td>
<td>2</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Students request that their institution provide free printing services</td>
<td>2</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Students request that their institution’s LMS notifications be used better (e.g., when an assignment is posted on the LMS)</td>
<td>2</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Students request that their institution provide online peer collaboration</td>
<td>2</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Students request that their institution provide online tutoring</td>
<td>2</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Students request that their institution utilize LMS more often</td>
<td>2</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Student requests that their institution provide more access to online journal databases</td>
<td>1</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Definition</td>
<td>N</td>
<td>Percentage</td>
</tr>
<tr>
<td>-------------------------------------------------------------</td>
<td>----</td>
<td>------------</td>
</tr>
<tr>
<td>Student requests that their institution decrease costs</td>
<td>1</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Student requests that their institution dismiss &quot;bad&quot; professors</td>
<td>1</td>
<td>&lt;1%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>970</td>
<td></td>
</tr>
</tbody>
</table>
Appendix B: Frequencies of Coded Student Responses—Instructors

Below we present the frequencies of codes for students’ open-ended responses to the following question: “What is ONE thing you would like your instructors to do with technology to enhance your academic success?” Percentages do not add up to 100%, due to independent rounding.

<table>
<thead>
<tr>
<th>Definition</th>
<th>N</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students request that lectures be placed online—either audio or video</td>
<td>158</td>
<td>14</td>
</tr>
<tr>
<td>Students request that course content be placed online (e.g., syllabi, course information, readings)</td>
<td>122</td>
<td>11</td>
</tr>
<tr>
<td>Students request that instructors post grades and feedback on assignments</td>
<td>107</td>
<td>10</td>
</tr>
<tr>
<td>Students request that instructors use more technology</td>
<td>78</td>
<td>7</td>
</tr>
<tr>
<td>Students request more use of videos in class or online</td>
<td>77</td>
<td>7</td>
</tr>
<tr>
<td>Students request that classes be more interactive—e.g., use of games or polls</td>
<td>59</td>
<td>5</td>
</tr>
<tr>
<td>Students request that faculty use available LMS technology correctly, or learn how to use it better</td>
<td>50</td>
<td>4</td>
</tr>
<tr>
<td>Students request less technology to be used</td>
<td>50</td>
<td>4</td>
</tr>
<tr>
<td>Students request more online exams and quizzes</td>
<td>50</td>
<td>4</td>
</tr>
<tr>
<td>Students request that faculty who are not currently using the school’s LMS begin to use the LMS</td>
<td>44</td>
<td>4</td>
</tr>
<tr>
<td>Students request that they be allowed to use technology more often in the classroom (e.g., laptops for notetaking)</td>
<td>43</td>
<td>4</td>
</tr>
<tr>
<td>Students request training or support on the use of technology</td>
<td>37</td>
<td>3</td>
</tr>
<tr>
<td>Students comment on general teaching skills of instructors</td>
<td>34</td>
<td>3</td>
</tr>
<tr>
<td>Students request more effective use of PowerPoint</td>
<td>30</td>
<td>3</td>
</tr>
<tr>
<td>Students request more assignments online</td>
<td>29</td>
<td>3</td>
</tr>
<tr>
<td>Definition</td>
<td>N</td>
<td>Percentage</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------</td>
<td>----</td>
<td>------------</td>
</tr>
<tr>
<td>Students request supplemental materials online (separate from course content) in order to enhance learning</td>
<td>29</td>
<td>3</td>
</tr>
<tr>
<td>Students request that instructors who already use online activities/assignments use more activities/assignments</td>
<td>25</td>
<td>2</td>
</tr>
<tr>
<td>Students request that study tools be posted online, e.g., practice exercises</td>
<td>25</td>
<td>2</td>
</tr>
<tr>
<td>Students request that instructors communicate via email more effectively</td>
<td>23</td>
<td>2</td>
</tr>
<tr>
<td>Students request that all course texts be e-books</td>
<td>18</td>
<td>2</td>
</tr>
<tr>
<td>Students request more assignments that can be submitted via LMS</td>
<td>15</td>
<td>1</td>
</tr>
<tr>
<td>Students specifically request the use of polls in the classroom</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>Students report that technology used should be more reliable</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Students suggest that more online collaboration with peers should occur</td>
<td>3</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Students request more online discussion via LMS</td>
<td>2</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Students request that technology or electronic resources be provided to them for free</td>
<td>2</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Student specifically requests LMS change to another platform</td>
<td>1</td>
<td>&lt;1%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1,125</td>
<td></td>
</tr>
</tbody>
</table>
Appendix C: Checklist to Assess General Concerns for Wi-Fi

The following checklist can be used by IT departments to diagnose general Wi-Fi complaints when they arise, using a simple set of probable concerns gathered from students’ open-ended responses. Institutions can also use this checklist as a proactive tool to anticipate student concerns with Wi-Fi networks. The list is in descending order from highest number of students reporting concerns to lowest number in the 2017 Student Survey open-ended item “What is the one thing you would like your institution to do with technology to enhance your academic success?”

- Wi-Fi is not available across all areas of campus, including dormitories, campus buildings, and outside.
- Wi-Fi in dormitories may be slowed down by wireless printers and personal routers.
- Wi-Fi is not easy to sign in to across multiple devices. Multiple logins are necessary during the day or month.
- Wi-Fi bandwidth does not adequately accommodate periods of high use.
- Wi-Fi costs are high for students, but strength and speed of networks is not adequate for student needs.
- Wi-Fi security measures should be improved.
- Wi-Fi usage should have fewer restrictions.
Notes


2. A total of 970 coded segments of data were derived from 1,100 open-ended student responses. Responses often had co-occurrence of codes and were not limited to single codes. Responses lacking substance (e.g., “not applicable”) were removed from the sample. Denominator to calculate percentages is based on total number of substantive coded segments (970) for this open-ended question rather than total responses. Figure 1 presents the top 10 codes within these responses, which represents 51% of all student coded responses (or segments of coded data). For complete frequencies for this coded response, see Appendix A.


5. A total of 104 student open-ended responses focused on what the institution could do to improve Wi-Fi. Of these, 62% (n = 64) reported concerns regarding availability of Wi-Fi in dormitories, outside, and in other campus buildings.


7. Seventy-one percent of students reported living off campus in 2016.


9. This subset of 189 students who reported they needed improved Wi-Fi to enhance their academic success represents a sampling bias, i.e., they feel dissatisfied enough with their institution’s Wi-Fi to provide open-ended responses. Twenty-eight percent (28%) of students who rated their institution’s Wi-Fi reliability as poor or fair did not provide open-ended responses.


11. There was no significant association between students who requested training and support in open-ended responses and their reporting of how prepared they were by their institution to use institution-specific or general productivity software (e.g., MS Office, Google apps, etc.).

12. The majority of these responses did not have depth. Many students simply stated “use more technology” for classroom learning.


15. A total of 1,125 coded segments of data were derived from 1,100 open-ended student responses. Responses often had co-occurrence of codes and were not limited to single codes. Responses lacking substance (e.g., “not applicable”) were removed from the sample. Denominator to calculate percentages
is based on total number of substantive coded segments (1,125) rather than total responses. Figure 4 presents the top 10 codes within these responses, which represent 64% of all student coded responses (or segments of coded data). For complete frequencies for this coded response, see Appendix B.

16. We use “blended” in the broadest definition of the term. For more discussion, see Jeffrey Pomerantz, Malcolm Brown, and D. Christopher Brooks, Foundations for a Next Generation Digital Learning Environment: Faculty, Students, and the LMS, research report (Louisville, CO: ECAR, January 2018).

17. This desire for content sharing aligns with iGen’s and Millennials’ embracing shared content, or “transparency-engendering online tools.” See, for example, Janna Anderson and Lee Rainie, “Will Millennials ‘Grow Out’ of Sharing?” Pew Research Center, July 9, 2010.


26. For examples of how technology is being leveraged for active learning opportunities, see EDUCAUSE Learning Initiative, “7 Things You Should Know about Emerging Classroom Technologies,” April 9, 2018.


28. None of these more complex features has more than a 20% student dissatisfaction rate. A plurality of students reported they were “neutral” when asked about their evaluation of the more complex features of their LMS, such as engaging with other students, collaborating on projects, and participating in study groups.


