Executive Summary

Since 2004, ECAR has partnered with higher education institutions to investigate the technologies that matter most to students by exploring technology ownership, use patterns, and perceptions of technology among undergraduate students. In 2013, the ECAR technology survey was sent to approximately 1.6 million students at 251 college/university sites, yielding 113,035 respondents across 13 countries. This year's findings are organized into four main themes to help educators and higher education institutions better understand students' current experiences:

- Students' relationship with technology is complex—they recognize its value but still need guidance when it comes to better using it for academics.
- Students prefer blended learning environments while beginning to experiment with MOOCs.
- Students are ready to use their mobile devices more for academics, and they look to institutions and instructors for opportunities and encouragement to do so.
- Students value their privacy, and using technology to connect with them has its limits.

These themes not only inform us about undergraduate students' opinions concerning technology, but they can also provide insight about the technology needs and expectations of tomorrow.

Summary of Findings

Students' relationship with technology is complex. They recognize its value but still need guidance when it comes to better using it for academics. The affinity of undergraduates for multimedia, mobile devices, and multitasking is well documented. What is less well recognized is the circumspect way in which students think about integrating technology into their academic lives, a characteristic of college students that has persisted for many years. Educational technology need not be flashy in order for them to value it (e.g., the course management system [CMS], asynchronous discussions, and online course content), and even the most dedicated technophiles want to know how the latest innovation will help them in their classes and in their undergraduate experience generally.

- Students value the ways in which technology helps them achieve their academic goals and prepares them for their future academic and workplace activities.
- Students are generally confident in their preparedness to use technology for coursework, but those who are interested in more technical training favor "in class" guidance over separate training options.
- Basic technology resources, such as the institution's website and the CMS, are the most pervasive and most valued.

- Freely available course content/open educational resources, e-books, simulations and education games, and e-portfolios are still in the experimental stages for most students.

Students prefer blended learning environments while beginning to experiment with MOOCs. When it comes to modality, college students seem to recognize effectiveness when they see it. Their preference for blended learning environments tracks well with the findings of recent large meta-analyses of the efficacy of different ways of integrating technology into higher education (e.g., the analysis by Barbara Means et al., 2010[1]). And students' long-standing desire to retain some degree of face-to-face contact with their professors persists, even with the increasing sophistication of online methods of interaction. Even for people who have never known a world without the Internet, the human touch is valuable.

- Although not fully mainstream, blended learning persists as the preferred modality.
- More students are taking online-only courses; however, few undergraduates have taken a MOOC.
- Few students say they'd use a digital badge (common in MOOC credentialing) in their application portfolio for an employment interview.

Students are ready to use their mobile devices more for academics, and they look to institutions and instructors for opportunities and encouragement to do so. Students and faculty gain sophistication with technology each year, and each year there is greater expectation for technology to be used as a teaching and learning tool. Students look to their instructors and their institutions for guidance about how to best use the technology they own to enhance their college/university experience, not only from an academic standpoint but also from an experiential standpoint. Finding how to best incorporate technology into the academic environment will require a partnership involving students, their instructors, and the institution. Mobile devices present a conundrum in this regard, because in the classroom, they can easily and indistinguishably be used for both class-related and extracurricular activities.

- Students hold high expectations for anytime, anywhere access to course materials and for leveraging the use of their personal digital devices inside and outside class.
- Undergraduates own two to three Internet-capable devices, and ownership of smartphones and tablets jumped the most (among all devices) from 2012 to 2013.
- Laptops are still cited as the most used and most important device for academics, but more students are beginning to use smartphones and tablets for academic purposes.
- In-class use of smartphones and tablets is not yet common; students say they are often prevented or discouraged from using these devices while in class.
- Mobile-device access to institutionally provided services, applications, and websites is up, though performance ratings are waning a bit compared with 2012.

Students value their privacy, and using technology to connect with them has its limits. The nature and degree of undergraduates' expectations of privacy is the subject of some debate. What is beyond doubt is that students are extremely sensitive to the boundaries between their personal and their academic lives. Even when safeguards are promised, students resist the integration into education of technologies that they perceive to be primarily personal, clearly indicating that because some technology is used widely by students does not mean that it should be leveraged for academic use.

- Technology makes the connected age possible, but using technology to help students *feel* more engaged in their classes (or campus life) and connected with others on campus can be challenging.
- Students prefer to keep their social and academic lives separate, and they maintain those boundaries in their use of technology.
- Students are only moderately interested in early-alert learner analytics and guidance about course offerings.
- Students prefer face-to-face interactions, e-mail, and the CMS as ways to communicate more with their instructors.

The Connected Age

For higher education, the "connected age" describes the technology-assisted hyperconnectivity of learners, faculty, and institutions to those around them.