

The Imperative for Faculty: Understanding Student Success Technologies and Other Analytics

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With certainty in stating the obvious, technology continues to grow in importance, breadth of use, impact, and expense at all colleges and universities. Faculty and staff have long been aware of administrative technologies used to manage and analyze payrolls, to oversee contracts and grants, to track donor giving, and to support decision-making around other institutional “business” practices. Some faculty members also possess expertise in the use of technologies to support teaching and learning, such as learning management systems, educational software, and social media. The research literature is replete with faculty use of technology in instruction at the course and class level.

I am increasingly interested, however, in the degree to which faculty and students are aware of the complex, in-depth discussions and expenditures that are taking place at the institutional level to select and implement technologies variously categorized as student success technologies, learning analytics, academic analytics, and business intelligence. Institutional decisions around these terms will be far reaching and will have the power to influence, at a level unseen before, student learning, faculty instruction, and curricular decisions from the course to the major to campus-wide. A glimpse into the world of technology intersecting with academics can be seen in Educause’s annual report on the leading technology issues in higher education, *Top 10 IT Issues 2016: Divest, Reinvest, and Differentiate* (Grajek et al. 2016). The 2016 report shows the dramatic movement of IT from support services and leadership in administrative tasks to technology-driven decisions in instructional matters. The main thrust is to leverage technology for continuous improvement in teaching and learning, coupled with the analysis of specific institutional goals like time-to-degree and cost efficiencies.

As background, Educause is a nonprofit membership association “whose mission is to advance higher education through the use of information technology.” (<http://www.educause.edu/>). Membership reportedly includes more than 1,800 higher education institutions, over 300 corporations, and numerous other associations and agencies. The precursor to Educause was CAUSE, the College and University Systems Exchange, which in the 1970s focused largely

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on administrative information systems. In contrast, four of the top ten 2016 IT issues focus on academic technologies and analytics. These items and their rank should be of interest to faculty members because the application of technology to teaching, learning, and associated analytics is clearly of high importance in post-secondary education. These items are as follow.

- #2: Optimizing Educational Technology. Collaborating with faculty and academic leadership to understand and support innovations and changes in education and to optimize the use of technology in teaching and learning, including understanding the appropriate level of technology use.
- #3: Student Success Technologies. Improving student outcomes through an institution approach that strategically leverages technology.
- #7: BI (Business Intelligence) and Analytics. Developing effective methods for business intelligence, reporting, and analytics to ensure they are relevant to institutional priorities and decision-making and can be easily accessed and used by administrators, faculty, and students.
- #10: E-Learning and Online Education. Providing scalable and well-resourced e-learning services, facilities, and staff to support increased access to and expansion of online education.

These issues are not mere musings about potential and distant futures. They reflect the escalating interest in strategically leveraging technology to improve teaching and learning, to analyze pathways for time to degree, to understand more fully the cost for a degree, and so on.

How will we reach technology-infused decisions at every level? Colleges and universities are awash in data about every constituent, activity, process, and outcome. Data reside in the registrar's office, admissions, business and finance, student affairs, alumni records, and faculty affairs to name only a few: the databases are multiple, although the data may not always be complete, networked, or "clean." Thus, data are seen as plentiful; and new tools are presented as available or emerging to support sophisticated analyses of students, faculty, curriculum, and academic initiatives. For example, tools can be used in advising to provide guidance and interventions, in instruction to support effectiveness in a variety of contexts (mobile, adaptive, online, and blended), and in curriculum to analyze degree pathways and programs in need of change. Regarding the latter, a sentence in the Educause report that caught my attention stated: "Finally, analytics also plays (sic) a major role in the third area: curricular design and institutional priority-setting. Metadata about student swirl—in and out of majors, in and out of courses, and in and out of institutions—can and should inform curricular design, academic programming, and even faculty assignment or development" (Grajek et al. 2016, p. 28).

Clearly, institutional leaders plan to use technology to analyze the data and processes associated with teaching and learning and a wide range of other activities to improve outcomes and increase efficiencies. As faculty members, we support an improvement agenda and the use of reliable and valid data to inform decisions. Consider, however, the terms *learning analytics*, *business intelligence*, and *academic analytics*. Do faculty members, who have historically been at the core of instruction and academic issues, know what these terms mean on their campuses? Do they understand the technological integration that is underway? Will the new analytics yield helpful, customized information that would be valuable to teaching and learning on a specific campus? Are technologies being selected and applied that faculty must be "developed" to use? Faculty members are deeply committed to teaching and learning, and they should not be on the sideline for decisions that may fundamentally alter the educational enterprise.

As we leverage technology to reach institutional goals in teaching and learning, do we have a shared understanding of those institutional goals? Do faculty members know that institutional goals are priorities that exist beyond the faculty-led objectives for selected majors and fields? And, who or what committee will set those institutional goals? Faculty leaders might find Figure 12 (p. 44) in the Educause report to be of additional interest; listed are 21 current and planned uses of analytics in higher education along with the estimated degree of utilization. Of no surprise, enrollment management is the analytic most widely used. Significantly, eight of the analytics focus on students; and four analytics focus specifically on faculty – promotion and tenure, teaching performance, instructional management, and faculty research and productivity.

Learning Analytics can be a tremendous boost to guiding students, assisting faculty members, and informing institutional decision-making; but the analytics should not be a surprise to those who are affected along the way. Are faculty members at the table and on the investigative and decision-making teams for the selection, implementation, and interpretation of the outcomes of these emerging technologies? It is far more effective for all constituents to participate in decision-making upfront on analytic tools and their application than to push back against the data-rich, whatever the quality, analyses on the back-end. The number of vendors offering software solutions for academic challenges is large and growing, and the Educause report projects the CIO's role in “managing vendors, services, and outside contracts” to become a primary responsibility over the next 5 years (p. 49).

To the IT panel's credit, the report calls for academic leaders and faculty, not IT professionals, to make decisions about pedagogical and mission-driven priorities. Moreover, it is noted that the most effective outcomes in incorporating technology include all of the institution's constituents—IT leaders, academics, students, and administrators. Cross-organizational collaboration is highlighted and emphasized for success. If we fail as faculty members to step-up, inquire, and participate in the technology-driven decisions that will affect teaching and learning, ultimately, our role in governance will be around smaller issues, fewer decisions, and lessened impact.

Technology will change the academy; and it continues to be pervasive, significant and variable. Essentially, will those technologies used on your campus be useful and able to contribute to improved outcomes for students, faculty, teaching and learning, and institutions? The faculty cannot (should not) defer to technology experts or leave a void that will then be filled by others in making these important enterprise decisions. What long-lasting decisions are being made on your campus today? Are you aware or on the decision-making team?

References

- Grajek, S., & the 2015-16 Educause IT Issues Panel (2016, January/February). *Educause Review*, January/February, 10-63. Also available from <http://er.educause.edu/~media/files/articles/2016/1/erm1611.pdf>