Data, Data, Data – What Does Management Want and Need to See?

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Abstract
Data is important and use of learning analytics is a major near-term trend (Educause, 2019). What data does administration need and want to see? How can you build data dashboards that have solid source data and are feasible to update on a routine basis while delivering value to management? This paper summarizes how the University of Virginia (UVA) analyzed iterations of reports to identify accurate data with high value for management review.

Keywords: Data, Reporting, Business Intelligence, Online Learning, Return on Investment (ROI), Management

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Introduction

Over the past 30 years, distance education programs have evolved from courses with their online component being discussion forum postings to online programs designed to enable students to engage with content, peers, and instructors in digital spaces (Powell, Watson, Staley, Patrick, Horn, Fetzer, & Verma, 2015). In parallel, our society is in a period of digital transformation with rapid development of new technologies, wide-spread adoption of technologies and growing digital communities (McGowan, 2019). According to futurist Heather McGowan, the top three most populated spaces are China, India and Facebook (McGowan, 2019). As society engages with technologies and inhabits digital spaces, there have been increased enrollments and programs offered online (J. E. Seaman, Allen, & J. Seaman, 2018). As more online programs become available, there is more competition (Garrett, 2019) and interest from management to understand operational factors such as ROI and profit margins.

Traditionally, non-profit public higher education institutions have focused on teaching, learning, and providing access to education. Alternatively, for-profit, private higher education institutions tend to have an increased awareness of the business of higher education. For-profit universities operate their institutions in mainly a top-down model where management determines the direction of the business and makes most if not all of the executive decisions (Hollands, 2017) Typically, these decisions are informed by data and evaluated based on return on investment (ROI) and risk (Hollands, 2017). At the non-profit, public higher education institution in this paper, decisions are often made bottom-up. Faculty work with students, peers and then deans to develop new programs or explore different tools or modalities for content delivery and learner engagement. For efforts that developed locally but then grow across the institution there is an interest from management to have insight on facets such as quality, student satisfaction, learner outcomes, and ROI.

At the University of Virginia (UVA), efforts in distance learning and online learning have been focused on the quality of teaching and learning and providing access to education. Online learning programs have been developed at a school level by deans rather than at a central level by the Provost or President. According to the Facts and Figures section of the UVA website, there are twelve schools at UVA, approximately 20,000 students and 16,000 faculty and staff. The annual operating budget including the UVA Medical Center is $3 billion dollars (University of Virginia, 2018).

Some schools, such as Engineering and Education, have been active in online learning for decades. At each school, faculty or staff report to their dean the progress of online courses, certificates and degrees. Reported metrics may be based on quality rubrics such as those developed by Quality Matters (QM) and the Online Learning Consortium (OLC). Other common measures are evaluation of the Community of Inquiry (CoI) components: teacher presence, cognitive presence, and social presence (Garrison, 2000). Historically, what has been tracked is the quality of teaching, learning, and the student experience and not ROI.

A decentralized approach to distance education and online learning has been successful for UVA. Schools that see strategic value in offering their courses online have been able to define, build and run programs within their domain. As more schools begin to offer online learning programs, there has been an interest from the

central administration to understand how to run these programs so they are successful and sustainable. Central administration is keenly interested in how to reduce redundancies and improve overall operational efficiency while enhancing student and faculty support. Another area of interest is how to produce a quarterly report for executive management that summarizes key metrics for status for all online programs in the university.

To address operational efficiency, a working group for the Teaching and Learning with Technologies committee was tasked with auditing resources for online learning. The intent was to get an understanding of the scope of resources and potential redundancies. This working group identified maker spaces, video and sound studios, equipment and staff across the University that supported online and hybrid classes. The working group report provided insight into the resources across the University and identified that resources were more fully utilized if they had full-time, dedicated staff to support the faculty and students (Palmer, 2019). The report identified areas to further investigate such as additional full-time staffing for central resources and tools that help faculty and students find resources to support their work.

To address centralized reporting, the Online Learning Committee worked to aggregate online learning metrics across the University. Reports varied widely from data intensive spreadsheets to graphic intensive and high-level. For example, reports used for accreditation had detail on the degree level, degree title, program name and CIP code. Reports within schools had information such as degrees, certificates, endorsements/licensure, percentage of faculty teaching online, number of students in online courses, number of students for specific semesters, number of online sections offered and average age of online student. Reports within schools that were broader than just online learning also included student and faculty stories. Reports within schools were aggregated and reviewed to create institutional reports in partnership with the central communications and public relations departments. These aggregated reports included beautiful graphics and bold numbers which outlined economic impact, ratings, and budgets (Figure 1).
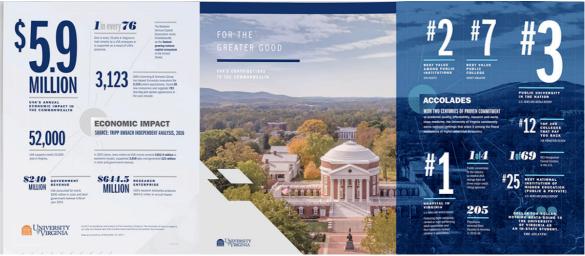

Figure 1: A sample institutional report.

After different reports were reviewed, a list of potential metrics to track was articulated and shared with stakeholders. This list of possible metrics included data

such as enrollment growth, student completion, number of schools, number of degree programs, number of faculty, and revenue. The list of measures included student retention, graduation rates, faculty training and post-graduation employment (Figure 2).
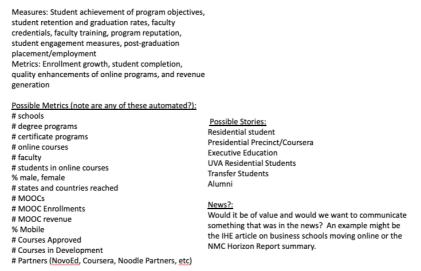

Figure 2: A first pass at measures and metrics to track for online learning.

Feedback from this list lead to a concise data set to report on each quarter. A concern at this point was the lack of a single centralized data infrastructure for online learner data. Systems such as the Student Integration System (SIS) has information on instructional modality, but there has not been a consistent standard across the institution for using this field to indicate if a course is online, hybrid, or technology-enabled. The report needed to clearly indicate the data source as well as how and when this data would be updated. For example, the number of students taking at least one online course and students taking online courses during the summer would be reported out annually and the Institutional Assessment and Studies (IAS) team would be the data source. The current version of the metrics report cites data sources in footnotes (Figure 3).

Figure 3: A current report template looking at online learning across UVA.

Conclusion

As society continues through a digital transformation, so does education. As more programs are moved online, there is more competition (Garrett, 2019) between programs. Due to increased completion, more managerial insight is desired to ensure high-quality programs are developed to be successful and sustainable. At UVA, online programs have been developed within schools and there has been little centralized reporting. To develop an accurate report that represents online learning efforts across the institution, a few committees and working groups coordinated efforts to build a metrics report. This paper has described the iterations of the report and the primary stakeholders engaged for the development. At the time of this paper, we are waiting feedback on the report format and anticipate providing this report to management quarterly. The University continues to coordinate resources and promote open communication across domains while tracking programs to support successful and sustainable online programs.

For other institutions that have similar reporting goals, it is recommended to identify stakeholders across the University, collaborate to identify which metrics to track, and clearly state data sources in footnotes on reports.

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