Using Business Intelligence to Make Evidence Based Decisions

What is Business Intelligence?

According to Tableau, business intelligence (BI), "combines business analytics, data mining, data visualization, data tools and infrastructure, and best practices to help organizations to make more data-driven decisions" (Tableau, 2020).1 Business intelligence, although stemming from the organizational and business world, plays a critical role in the work of higher education and student affairs practitioners.

BI and Student Affairs Work[1]

Most often, business intelligence is integrated into student affairs work with dashboards. "Dashboard indicators represent a significant technological development for monitoring, analyzing and managing institutional effectiveness, including student learning and student affairs" (Mitchell, Ryder & Schuh, 2013, P. 80). Dashboards allow practitioners to analyze massive amounts of data regarding the student population at the university and their engagement all in one place.

Currently, the data collected at the institution is used for the purpose of quick analyses, reporting out to stakeholders, or facilitating direct outreach and support. "Many programs rely on data such as those related to grade point average (GPA), retention, number of credit hours, and participation in programs or organizations" (2013, P. 76).[2] This application of BI is the first rung of data integration, commonly referred to as descriptive statistics. Descriptive statistics typically focus in on a small piece of the data puzzle.

The next step in the hierarchy of BI complexity is using data to make informed, evidence-based decisions and predictions based on the patterns seen in the collected data. This form of data integration is referred to as predictive statistics. Predictive statistics use data to gain a more comprehensive outlook on the student population.

---

[1] Tableau. (2020). What is business intelligence? Your guide to BI and why it matters. Retrieved from: https://www.tableau.com/learn/articles/business-intelligence

[2] Mitchell, J., Ryder, A., & Schuh, J. H. (2013). Developing and Using Dashboard Indicators in Student Affairs Assessment. *New Directions for Student Services, 2013(142),* 71-81.

The table below further differentiates between descriptive and predictive statistics[3]:

Descriptive Statistics	Predictive Statistics
Describes and Summarizes Data	Patterns & Trends Based on Behaviors & Relationships
- What happened? - Why did it happen? - What's happening now?	- Based on history, what may happen? - What is likely to happen based on X?

Through more in-depth analyses and data integration, higher education and student affairs practitioners are able to forecast trends in the student population. Business intelligence allows for staff to engage in strategic planning efforts through a proactive approach as well as the opportunity to gain insight on a greater picture of the population.

Division of Student Life Portal and Dashboards at the University of Iowa

A suite of dashboards and other visualizations of Division of Student Life data are available. Access to the following dashboards can be requested through Workflow: Food Pantry Operations; Housing; Iowa GROW; Interpersonal Violence Prevention; Leadership, Service & Civic Engagement; Late Night Programming; Multicultural & International Student Support & Engagement; National College Health Assessment; Student Engagement and Campus Programs; Student Health; and Swipe.

Steps for Incorporating BI and Big Data[456]

Dr. John Schuh outlines several elements of creating a culture of assessment within student affairs units. Specifically related to the use of business intelligence are the importance of data driven decision-making and using multiple forms of assessment. Using business intelligence resources that are readily available provide an alternative to the common data collection methods such as surveys, interviews, and focus groups. The incorporation of these tools provides further evidence to support departmental decisions regarding programs and services.

With the incorporation of valuable business intelligence tools also comes massive amounts of data which can be overwhelming. You might find yourself wondering "Where do I start?" The first step to utilizing BI in your work is to reflect on the goals of your program/service. What would you like to know about the experiences of

---

[3] Jenner, C. (2017, May 9). *What is the Business Intelligence & Analytics Maturity Model?*. Retrieved from: https://www.arbelatech.com/insights/blog/what-is-the-business-intelligence-analytics-maturity-model.html

[4] Schuh, J. H. (2013). Developing a Culture of Assessment in Student Affairs. *New Directions for Student Services, 2013*(142), 89–98. https://doi-org.proxy.lib.uiowa.edu/10.1002/ss.20052

[5] Goodman, K. M. & Stoll Turton, B. (2017). You Don't Have to Be a Research Expert to Use Data Effectively. *New Directions for Student Services, 159*. Wiley Periodicals, Inc.

[6] Blaich, C. & Wise, K. (2017). Approaching Big Survey Data One Byte at a Time. *New Directions for Student Services, 159*. Wiley Periodicals, Inc.

participants in your program/service or the impact of your work? Use this focus to search for patterns in the data similar to those you may have seen in other sources. Patterns in data can also be discovered through the process of disaggregating, or breaking down, the data by different groups (ex. race/ethnicity, socio-economic class, year).

Cultivating a culture of assessment within your department will provide the opportunity to regularly integrate conversations about data. A culture of assessment normalizes the utilization of BI and big data in all departmental functions and among staff. For example, an office with a culture of assessment will include conversations about data regularly in staff meetings and refer to assessment data to inform decisions about programs/services.

If you find yourself overwhelmed by the data and BI resources available to you, reach out for support. The assessment coordinator for your department is a great place to start, followed by the Assessment Council and the department of Assessment, Improvement, and Research.