Data’s Role in Student and Institutional Success

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The Data Explosion

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CIOs View of Their Institutions’ Data Use

To what extent do you agree or disagree with the following statements? My institution...

- ...uses data to support student success. (n=158)
  - Strongly disagree: 2%
  - Somewhat disagree: 8%
  - Neither agree nor disagree: 16%
  - Somewhat agree: 52%
  - Strongly agree: 22%

- ...effectively uses data to inform important decisions. (n=158)
  - Strongly disagree: 5%
  - Somewhat disagree: 15%
  - Neither agree nor disagree: 20%
  - Somewhat agree: 49%
  - Strongly agree: 11%

- ...makes data analytics a strategic priority. (n=157)
  - Strongly disagree: 3%
  - Somewhat disagree: 17%
  - Neither agree nor disagree: 20%
  - Somewhat agree: 41%
  - Strongly agree: 19%

- ...uses data as a means of improving internal processes. (n=158)
  - Strongly disagree: 2%
  - Somewhat disagree: 18%
  - Neither agree nor disagree: 27%
  - Somewhat agree: 44%
  - Strongly agree: 10%

- ...has buy-in across departments regarding the importance of sharing and analyzing data. (n=157)
  - Strongly disagree: 1%
  - Somewhat disagree: 0%
  - Neither agree nor disagree: 22%
  - Somewhat agree: 18%
  - Strongly agree: 43%
  - Strongly disagree: 10%
Impediments to Effective Use of Data

• Structural
  • Departments operate in silos
  • Data live in different, often disconnected systems

• Cultural
  • Colleges and universities historically unaccustomed to being asked to prove their efficacy and value
  • Suspicion that certain kinds of data (assessment of student learning, employee productivity) will be used in punitive ways

• People
Data’s Role in Decision-Making

• Data-driven
• Data-informed
• Data-inspired
“The data really can show you kind of the current state of things. The decision making is still going to be ours to make. It doesn’t matter how fancy your artificial intelligence is going to be or your predictive model—at some point, some human person is going to have to decide what to do.”
The New Frontier: Student Success

• Colleges have long collected/depended on data in realms such as admissions, fund-raising, research activity – areas where they had a strong financial or other motivation to do so.

• Enrollment and accountability pressures are overpowering traditional hesitancy to use and analyze student data – as institutions are increasingly held responsible for whether their students succeed, they’re compelled to use all available resources to figure out what they’re doing well (and not).

• Technology has also made much more data available.
Data in Service of Equity

Cal State system, the nation’s largest, is striving to improve attainment and close equity gaps through its **Graduation Initiative 2025**.

Student Success Dashboard helps 23 campuses answer questions like:

- How many additional students of color need to graduate to eliminate the equity gap?
- Which academic behaviors have the most differentially positive impact on retaining first-generation students?
- Are students achieving junior status at equitable rates?
The Potential Downsides
Machine Learning Can Replicate Bias

“While AI-assisted education technologies offer great promise, they also pose a significant risk of simply replicating the biases of the past.”

--Dan Knox and Zach Pardos, “Toward Ethical and Equitable AI in Higher Education”
The Many Facets of Data Privacy

Some of the questions campuses regularly confront:

• Should institutions analyze student learning data across many courses and in various information systems to support student success initiatives?

• Should technology-driven student success systems import “gray data,” such as network connection time, library access, dining hall food purchases and learning management system access, to paint a fuller picture of a student’s learning experience to offer remedial or additional services to the student?

• How much information should be collected from students, faculty and staff to perform contact tracing and verify testing and vaccination status? Should students, faculty and staff be required to wear a BioButton?

• What types of online proctoring solutions effectively combat online cheating and do systems that scan a student’s surroundings (like a bedroom) pose privacy concerns?

• Can device connections to campus Wi-Fi networks be used to study which campus areas are visited most frequently by different populations to analyze trends as disparate as crime rates or dining hall capacity?

(Source: “Advocates for Privacy: A Model for the CPO 2.0,” Michael Corn and Joanna Grama)
Thanks