



Using data for student success in higher education

Student success has been a strategic focus across higher education for more than a decade, but the vision continues to change.

“Students and their needs are getting more complex and challenging,” said Mark Hampton, executive education advisor for AWS. “If we start thinking about them and work backwards, we’ll quickly see data will be a part of the path to giving students the best experience.”

Drawing from the insights of a diverse group of higher education IT leaders gathered by the Center for Digital Education (CDE) and [Amazon Web Services \(AWS\)](#) during an October 2022 virtual workgroup, this issue brief outlines new and existing data sources that can help support student success.

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It also identifies best practices to make sure institutions have access to information that can help them better serve students.

An evolving vision of student success

Along with their ongoing emphasis on economic mobility and closing equity gaps, many institutions are addressing pandemic-related learning loss, basic student needs including mental health, and the demand for greater flexibility. They are also moving beyond

metrics like retention and completion by seeing what students do with their degrees and providing new opportunities for lifelong learning.

“The pandemic has created a more holistic vision of student success,” said Jim Bradley, chief information officer (CIO) at Sam Houston State University. “It gave us time to flesh out a 360-degree view of the student.”

While today’s students have evolved, technology structures supporting student success have not.



“Modern students are fundamentally different from when most colleges developed their structures and policies—and frankly those have changed very little,” said Jonathan Gagliardi, vice president of economic mobility and social impact at Northern Arizona University.

Thinking differently requires a strategy “more multidirectional but also more integrated,” Gagliardi said.

Institutions must consider the full student lifecycle across current and future learning models. They should also evaluate what data can help improve their understanding of the factors impacting student success—and provide them to faculty and staff who can help support struggling students.

However, institutions need to do this “without diluting the sense of community students have come to expect and appreciate about a college education,” said Gagliardi. “If you segment students to better understand their needs, but do not take measures to ensure you preserve an integrated and inclusive community, then you might be working against your institutional vision and values.”

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Challenges and barriers

Higher education institutions often lack two things: quality and timely data to provide student support, and the necessary expertise to use data to improve student outcomes.

“We need data that is more timely, relevant, and integrated, and more stakeholders need to be data literate,” Gagliardi said.

The barriers are familiar: budgetary limitations, siloed systems, and an institutional approach to data warehouses. These systems are largely focused on data of record, including past credits and grades, as opposed to more real-time, transactional information yielding insights into whether students are on campus, in libraries, or logging into learning management systems. These insights can alert faculty and staff when students begin to struggle—not after they’ve

failed a course or dropped out. They can also help resource-challenged institutions identify interventions that have a positive impact on student outcomes and those that do not.

Then there are the organizational barriers. Data sharing at all levels is often limited by a lack of knowledge and, at times, by suspicion. Concerns that data will create negative narratives about individual departments or the institution means “trust issues come into play” with gatekeepers, according to Kafui Kouakou, assistant dean of the Albion College School for Public Purpose and Professional Advancement. “People close the door to prevent access or are only open to giving very limited access,” he said.

At the same time, there are opportunities to begin linking new and existing data sources to

improve student success efforts. New technology can support flexibility and experimentation—connecting and supplementing, not replacing, existing systems. Investments should focus on building data lakes and enterprise tools to sift through unstructured data, including enhanced storage, analytics, and artificial intelligence.

The primary challenge is not technical. According to Hampton, it's driving an institution-wide approach to connecting existing systems and data stores.

"Institutions have robust CRM systems for recruitment, admissions, student engagement, and alumni development, and rarely do those systems talk," Hampton said. "Higher ed is at the point where we don't have the luxury of inaction. We need to be harnessing these data resources better and using them to operate more efficiently."

Strategies for data-driven student success

Win the support of senior leadership.

Institutional change often comes from the top. Presidents and other senior leaders must empower data initiatives and break down silos. "It takes your president or provost to stand up and say we don't need five systems to do this," said Brian Cohen, vice president of CDE.

In the case of senior leaders, winning support often involves challenging their own mindsets about data, which tend to focus on anecdotal evidence. "Data—in the modern sense—is still not baked into the DNA of some of our current senior leaders," said Gagliardi. "Instincts are a form of data, but there are too many sources of quality data to solely rely on lived experiences."

Technology leaders should take the lead in bringing together data from disparate systems. "You need business rules to make things work in systems that force us to be consistent," said Ben Matthew Corpus, vice provost for admissions and financial aid at Florida Polytechnic University. "That comes from a savvy CIO."

Create dedicated student success structures.

Many institutions have created cross-departmental student success teams. These teams must focus on student success initiatives and gather the data needed to support them. "What's often lacking is a cross-functional role helping orchestrate across key areas," Gagliardi said. "Without that, people are going to defend their turf."

In many cases, institutions are creating senior leadership roles focused on student success. "When no one person is accountable, then no one is accountable," said Jimmy

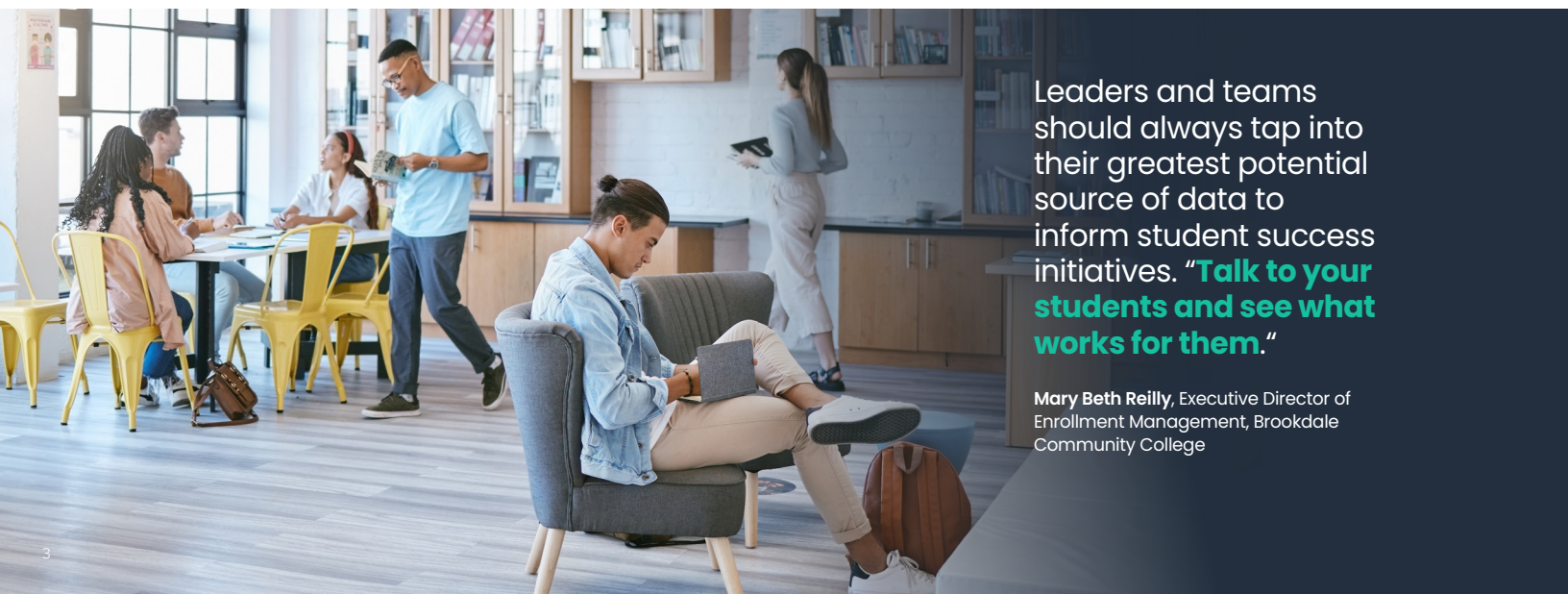
Jung, senior vice chancellor at Rutgers University-Camden. "That's why these positions are becoming more popular."

Leaders and teams should always tap into their greatest potential source of data to inform student success initiatives. "Talk to your students and see what works for them," urged Mary Beth Reilly, executive director of enrollment management at Brookdale Community College.

Start small. Begin data-informed initiatives with a project that builds support for broader institutional change, Hampton said. "What I'm seeing that really inspires me are institutions focusing on very specific issues and building an analytics solution around solving that problem and then using it as an opportunity to build out," he said. "You can see progress quickly and move the institution. You don't have to build the whole ship in advance if you want to solve one specific issue."

Develop data governance policies.

Gathering and making use of integrated, timely, and relevant data requires deliberate efforts—and policies to guide them. "Data governance is an important part of a healthy culture of evidence," said Gagliardi. Partnerships between IT and institutional research offices can help develop strong data practices.



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Educate staff on data use and sharing. It's essential to expand the understanding of data use and sharing beyond the student success team. Doing so may require institution-wide training, said Francesca Fiore, associate provost of New York Institute of Technology.

"Having a common understanding of data literacy and what the baseline level of data literacy needs to be is really important," she said. "We have to reinforce that we're looking at data through a common lens and questioning our assumptions."

It's particularly critical to win the support of frontline faculty and staff. "There are a lot of people who are deeply committed to their roles serving students. They see the day-to-day interactions with students as critical, but they tend to forget there's a trail of data that comes from them," Hampton said. "We have to educate faculty and staff on how data can help them serve students—and it needs to be something the entire institution has access to."

One key focus, said Jung: Ensuring faculty and staff not only understand how to use data but also how to use it in ethical ways that respect student privacy. This becomes increasingly important as institutions use more ephemeral, transactional data about students' daily lives.

Use common systems and tools. Transparency behind data sharing will be critical to driving buy-in for new data procedures and systems.

"I don't want to count the number of CRMs I have," Bradley said. "Everyone has to trust each other and be willing to use the same tools."

Hampton agreed. "If every office builds their own solutions to meet a specific student need, then the institution loses sight of the whole student," he said.

Explain your technology investments. To win financial support in challenging budgetary times, student success leaders must actively justify technology investments.

"There's a way to quantify investments to show they will help with our challenges," Corpus said.

Identify the right technology partners. Technology partners can provide insights from across and beyond the sector to help institutions develop best practices for data collection and use. Colleges and universities rarely have the resources to build solutions from scratch. The good news is, they don't have to, Hampton said. "Engaging technology partners not only helps them to identify and build the right solutions, but also to maintain and modify those solutions as needs and conditions change."

What's next

As efforts mature and data use becomes more widespread, institutions can create a virtuous cycle where approaches and experiments using data to solve problems are formalized in repeatable steps, Hampton said.

Student success efforts also offer opportunities for students to become "data-informed champions of their own learning," Gagliardi said. Teaching students how to examine and act on their own data can help them remain engaged while providing them with data literacy skills that will serve them well in their careers.

Institutional leaders should view data as a tool used to understand the student journey, identify when to support students, and develop strategies that "privilege our students rather than reinforce hierarchies," Gagliardi said.

Leaders should also not lose sight of the importance of serving students in meeting institutional goals. "Using that to drive the story has mobilized my campus," Jung said.

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