Leaders at four universities share how they used data to mobilize broad-scale action and dramatically improve student success.

Florida State University
San Diego State University
University of Wisconsin-Eau Claire
Georgia State University
Using Data to Improve Student Outcomes: Learning From Leading Colleges

INTRODUCTION

All across the country, leaders in colleges and universities are asking the same question: What can we do to improve student success, especially for the low-income students and students of color whose graduation rates often lag behind? By now, college leaders understand that just adding an initiative or two — a First-Year Experience, a few learning communities or freshman seminars, a new tutoring or multicultural center — typically won’t be sufficient. Unless student success is a core value and broadly felt responsibility throughout the institution as a whole, it is hard to budge existing patterns of student success.

But how does one build that institution-wide sense of responsibility and mount the broad-scale action necessary to dramatically improve student success?

If you ask the leaders at the fastest gaining institutions, they have a variety of answers. Clearly, no single strategy works everywhere. But at the core of all of their strategies is a very different use of institutional data. No longer just the stuff of institutional reports to various government agencies, data are used throughout institutions to mobilize action.

Transforming the use of data from primarily a compliance exercise to a platform for action, though, is easier said than done. So we travelled to four unusually successful universities to learn about how they used data and where it led them.

This simple guide, intended to help college leaders begin or re-energize the change process in their own institutions, is the product of those visits.

FAST IMPROVERS IN STUDENT SUCCESS

Florida State University, with more than 31,000 students, is a quintessential large public research university. Historically, the graduation rate gap between white and underrepresented (URM) students had not been large, but rates for both student groups were low. Between 2002 and 2013, the graduation rate for white students increased by 13 percentage points — from 65 percent to 78 percent. Likewise, the rate for URM students grew from 60 percent to 75 percent. During the same period, Florida State continued to increase diversity with the percent of Pell Grant recipients rising from 19 percent in 2002 to 27 percent in 2013 and percent URM increasing from 22 percent to 25 percent.

San Diego State University is a diverse public university with Latino students comprising 29 percent of undergraduates. In the past decade, as the campus began to prioritize student success, graduation rates for Latino students nearly doubled from 31 percent in 2002 to 60 percent in 2013. Meanwhile, the overall graduation rate improved from 38 percent to 66 percent. These gains occurred alongside increased enrollment for URM students and Pell Grant recipients.

In 2002, only 16 percent of first-time, full-time students at the University of Wisconsin–Eau Claire were Pell Grant recipients. In 2013, more than a quarter of them received Pell. During this period of expanded access, the university also saw graduation rates for URM students grow significantly. Between 2002 and 2011, graduation rates for URM students nearly doubled, increasing from 36 percent to nearly 70 percent, which was — at that time — higher than the institution’s overall graduation rate. However, this tremendous growth saw some setbacks in 2012 and 2013. Currently, the graduation rate for URM students is 53 percent, which is 17 percentage points higher than it was in 2002.

A truly urban institution, Georgia State University occupies buildings among the skyscrapers gracing the Atlanta skyline. Embracing a mission to educate a diverse population, Georgia State has evolved to reflect the city it calls home. More than half (56 percent) of freshmen in 2013 received a Pell Grant, up from 29 percent in 2002. Between 2002 and 2013, the percentage of URM students among undergraduates grew from 37 percent to 46 percent. Over this same period, graduation rates for URM students jumped from 32 percent to 56 percent, a higher rate than their white peers. In fact, the gap in graduation rates closed in 2003 and has remained that way since.

HOW THESE LEADERS USED DATA

LAUNCHING A CAMPUS-WIDE IMPROVEMENT EFFORT

In every institution we visited, leaders used data to call the campus community to action and remove obstacles to student success. These data needed to tell a compelling story that would help inspire those who want to take the next step in improvement efforts. There were similarities in the types of student outcomes data that resonated within each institution. But differences in the storyline that tied the data with the unique history and mission of each campus played a significant role in what resonated deeply, how quickly the call to action was created, and how the college took action to improve outcomes.

The examples at each institution describe a key catalytic moment in the evolution of improvement efforts on their campuses.

Leaders from San Diego State describe the gap in graduation rates between URM students and their peers as the motivating point that helped them to galvanize action. In an address to the faculty senate, then-President Stephen Weber talked of the many ways in which the faculty had worked toward — and attained — excellence over the years. “But a great university,” he said, “doesn’t lose almost two-thirds of its Latino freshmen along the road toward graduation.” That moment kicked off a decade-long improvement effort that resulted in significant gains in student success, especially among Latinos.

At Florida State, the initial light bulb moment that created urgency for improvement came from the college’s retention rate, which hovered around 82 percent in the late 1990s. While many colleges around the country might be quite satisfied
with that return rate, leaders at Florida State decided that losing 2 out of 10 entering students was just plain too many. By establishing a goal of raising retention above 90 percent, then-Provost Larry Abele was able to organize a focused improvement effort.

And Florida State’s efforts got a second kick-start from a qualitative data source — the National Survey of Student Engagement. Answers to one question on the NSSE — “What is the academic reputation of FSU in your hometown?” — suggested that Florida State had a serious problem with its perception among students and the public. This was a transitional moment for the university and sparked diligent work to improve its reputation as a rigorous academic institution. These efforts shifted the perception of students and paved the way for future improvement efforts. Qualitative and quantitative data each have benefits and challenges, but leaders at Florida State were able to successfully employ both.

Leaders at Georgia State used the contrast between their student-focused culture and unacceptably low graduation rates to galvanize an improvement effort there. While many colleges identify graduation rates as a target for improvement, Georgia State’s transformational improvement story can be attributed to a mindset of unpacking such “30,000-foot” metrics into their component pieces. They constantly look beneath the big picture to identify factors that influence larger results. In the beginning, campus leaders took a closer look at first-year retention rates, which had hovered between 82 percent and 83 percent for years. What they learned was a giant surprise: While they were retaining more than 80 percent of freshmen, only about 20 percent had actually attained sophomore status. This finding spurred a number of actions to improve the number of students completing 30 credits by the end of their first year, including increasing the recommended course load from 12 to 15 credits, ensuring that college scheduling practices led to improved course availability, and working hard to shrink the number of students earning a D, F, or withdrawing.

Using data to make the case for change doesn’t always have a smooth evolution. At UW–Eau Claire, senior leaders identified data they felt was a clear call for change. However, initial efforts to share these data were not embraced by faculty. The data revealed that while the six-year graduation rate was strong — near 65 percent — the institution’s four-year graduation rate was unacceptably low at 18 percent, creating a smooth evolution. At Florida State were able to successfully employ both.

Taking an alternative approach, they dissected the time-to-degree data by demographics, such as ethnicity and income status of students, which succeeded in breaking through the reticence. In the end, the senior leader reflected, “These people want to be fair. If you can show them data connected to real students with a story, it can break through.”

**MODELING DESIRED BEHAVIOR AT THE TOP**

These four institutions show a remarkable amount of consistency in the stories their staffs tell about how they created a shared sense of ownership over analyzing, understanding, and improving student success. In every case, it started with leadership. Either new or existing campus leadership embraced the behavior they wanted in others by using data themselves, digging in, disaggregating it every which way, and looking for insight about both problems and potential solutions. Their personal engagement with data ensured that discussions of campus structures and policies required the use of the insight generated from data, as opposed to strictly the data itself.

Abele, of Florida State — a scientist by discipline and a self-described “data nut” — presents a textbook case of what that looks like: He began by spending a lot of time with the data himself. But, over time, Abele insisted that others do so as well. One long-time campus leader noted about Abele: “When he came in, there was a huge shift in culture that was started. It no longer OK to just do things you thought were right; you needed data to support new ideas and also to assess, evaluate, and improve current programs.”

At Georgia State, the trajectory was similar. Several successive presidents and provosts made it clear from the beginning that they intended to use data for improvement and expected others to do the same. President Mark Becker used data to put a human face on the numbers. “You have to put the students at the center of the conversation, and that’s not the norm in higher education. Traditionally, what is taught, when it’s taught, and how it’s taught is based on institutional concerns. But these issues need to be based on what’s best for students.” And, in every case, university leaders need to jump in personally. They should dig into the data themselves, identifying strategic research questions, exploring results, and participating in problem-solving to address identified issues.

**DEVOTING RESOURCES TO ENGAGING THE COMMUNITY AS PROBLEM-SOLVERS**

While the regular use of data is certainly modeled at the top, senior leaders at these four institutions clearly know that organizational improvement doesn’t happen only, or even
primarily, at the top. Successful organizational improvement efforts engage mid- and ground-level practitioners — including faculty, staff, deans, and department chairs — in owning the work. At each institution we visited, there was a clear sense of confidence throughout the leadership team about the institution’s ability to improve key student outcomes. Much of that confidence stems from their success in engaging people throughout campus to own, analyze, and act on their own data.

Leaders at Georgia State have been focused on improving student outcomes for quite a long time, and numerous campus leaders at the administrative, programmatic, and faculty levels demonstrate this clear sense of mission and purpose. Becker, of Georgia State, identified the consistent historical and contemporary ethos of the college — serving not elite students but Atlanta’s working class — as a key element in their broad-based focus on student success. Given this culture, the transition to using data for improvement did not face as many roadblocks as it may have at other colleges. But it still took time and patience. Said one campus leader, “It may have been slightly easier at GSU with a downtown, urban university focused on student success, but there was still resistance to change.”

Data was the most important method used to cut through this resistance. The leadership adopted and encouraged others to use data, analysis, and the resulting insight to improve outcomes. The institutional research professionals at Georgia State noted that these leaders really cultivated a culture where the end users are the “data stewards” who are responsible for “understanding the context of their data and improving it.”

And the leadership team at Georgia State didn’t just talk about using data; they created a structure to sustain and prioritize this practice. Every morning at 8:30, the provost convenes a meeting with associate provosts, the vice president of research, an institutional research analyst, and other campus leaders. A significant portion of this agenda is preserved for generating research questions about student success, bringing relevant data and analyses to the table for exploration, and strategizing how to share the most insightful findings with university leaders.

Florida State utilized a similar structure, also initiated by its provost, in its evolution toward a culture of shared ownership. In the 1990s, Abele assembled a team of about 20 academic affairs and student affairs professionals to collaborate on improving student retention and progression. The team met weekly to explore and act on key student success issues. These weekly meetings continued for more than a decade; even after Abele’s departure, they still meet multiple times a month.

Today, according to campus officials, “the departments that don’t take ownership over students and student issues are now extreme outliers.” The payoff for the effort to develop a broader sense of ownership seems clear: “If you pay attention,” says one official from Florida State, “you will see leadership emerge at all levels.”

The effort to create a sense of broad ownership at San Diego State was enhanced by the strong shared governance processes at the university. While the strength of shared governance varies at colleges across the country, it is particularly strong in California’s public universities. To some, this may create an obstacle to transformative change, but San Diego State leaders used the structures of shared governance to engage and empower a variety of campus professionals. According to a senior leader, the exploration of key outcomes is conducted in a shared governance model with the University Senate. “We are constantly sharing data with them and their committees — faculty and staff are very involved.” The senior leader also noted that for faculty specifically, the “nomenclature we use is critical. Faculty care about student success and diversity, and they don’t care about ‘dashboard indicators.’ To engage them, you have to describe things they care about.”

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— Senior leader, San Diego State University

At UW–Eau Claire, as described earlier, leaders had a greater challenge evolving the culture to accept the need for change, and the data alone weren’t enough to galvanize action. These leaders strategized processes and outcomes that could evolve this transition to shared ownership, initially working through deans and department heads and then with practitioners on the front lines. Their primary question was, “How do we help them — those in the departments — make the decisions they need to?”

What they learned is that it was important to ensure that senior leaders weren’t prescribing solutions that could be viewed as administrative decrees or fiat. As a senior leader noted, “We give them the data, but we don’t tell them what’s good and bad about it. We’re not telling them where the problem is; they identify the problem and we encourage them to solve the problem.” In doing so, they are not only creating a shared sense of ownership throughout the college, but also leveraging the significant subject matter expertise of those faculty and staff who interact with students. These same individuals have unique insights into the challenges faced by students and potential opportunities for improvement.

ASSURING ACCESSIBLE, ACCURATE, AND EFFECTIVE DATA DELIVERY

Though dashboards and data tools weren’t the initial route to engaging faculty and staff in these four institutions, leaders in each eventually found innovative ways of creating tools,
dashboards, and other technologies that got clear, consistent, authentic, and usable data into the right hands. By automating key reports and creating portals for users to query the data, these systems freed the capacity of leaders, practitioners, and institutional research professionals to dig into the data on student success. Further, these institutions made a commitment to making their outcomes public and known through their dashboards and searchable databases. These steps both amplified the call to action on improving student outcomes and broadened who could take action.

Despite a long history of focusing on student success, practitioners at Georgia State noted that “four or five years ago, we had nothing consistent in our system that would help us track students.” At that time, necessary data existed in numerous databases and “shadow systems” sprouted up across campus because of a mistrust of the historical database. After dedicating 18 months to creating a central, usable system, the university housed its newly clean data in an institution-level database that tracks student progress across hundreds of milestones and indicators. To maintain its quality, campus leaders examined and revised data entry, cleaning, and security practices.

At present, Georgia State’s online data repository contains 130 screens of the most-requested data. Early adopters have helped to build broader trust and use of the system. Trainings on using the front-end system fill up quickly with campus practitioners. By automating routine reports, the system is designed to allow users to focus their energies on more pressing questions about student progression and success. As one practitioner noted, “We focus on the ad-hoc requests — that’s where the power is.”

At Florida State, the ideas of business intelligence — and even the use of the term — started taking hold in the late 1990s, in parallel to its adoption in industry (yet much earlier than at the vast majority of colleges). To make that approach work, however, Florida State leaders needed to create processes to clean the data, and they needed a technological system to capture, present, and support the improvement work of the practitioners. They also realized early on that they needed to move the ownership of data and analytics from those who didn’t understand the nuances of on-the-ground data to the key users who understood the nuances of working with students. One individual involved in the development of the tools noted, “In order for mid- to upper-level management to use the data, they needed to get their hands dirty and understand the data. We took care of the mechanics, but empowered them to ask good questions, get focused results, add their expertise to see the nuance in the data, and then help design solutions to address issues you’ve identified.”

Numerous leaders at Florida State described the process of using the system to explore the data and create insight, clearly illustrating that the culture has taken hold throughout the university. Users also were clearly attuned to how user-friendly the system was designed to be. “This has been the No.1 key in my job to get things done — being able to access it in seconds and having it be meaningful. If I need the number of first-time-in-college students living off-campus with low GPAs, I can get it to target them for an intervention.”

Leaders at both Florida State and Georgia State have learned that good tools end up empowering users to explore the data and make improvements. Florida State administrators refer to “problem finding” as a goal of these efforts, with a subsequent step of designing customized solutions to address them. They report seeing “business intelligence as a means to empower people through data. It’s also to use data to recognize where students were in their [progress].” Finally, Florida State designers were very savvy at keeping the technical side away from the users and creating the tools to allow them to engage and interact directly with data.

But remember, business intelligence tools, such as the searchable databases described in this section, will not result in change by themselves. What is notable about these institutions is their deep attention to not only the design issues in creating the tools, but also how these tools are — and continue to be — used for improvement.

PROACTIVELY ANALYZING STUDENT PATHWAYS

To better understand the needs of students, it can be helpful to analyze their experiences navigating through the institution. Such a process will identify potential pitfalls and momentum points that either serve as barriers or catalysts on the journey toward completion. But what it also helps show is that what seems so very clear and transparent to institutional leaders and faculty — the courses and credit accumulation necessary to obtain a degree — is often a complete mystery to many students. These four leading institutions share a strong thread of conducting such pathway analyses, then acting to map clearer pathways to a degree and to remove any blockages identified.

Pathway analyses often reveal course availability issues that create bottlenecks in the completion of key courses required for many majors. San Diego State had a long history of issues with course availability heading into the late 1990s. New leadership brought a renewed focus on enrollment management (before this had become a popular term) to remove these barriers. “If we had bottlenecks, we addressed them,” said one leader.

At UW–Eau Claire, the six-year graduation rate was relatively high, but the four-year graduation rate was quite low. To
address that pattern, faculty and staff identified course bottle-necks and acted to remove them.

But the analysis of student pathways can point to other issues as well. As part of San Diego State’s retention plan, campus personnel comprehensively reviewed data on the use of its support programs to ensure that the right students get the right interventions at the right time. Their assessment revealed that URM students were not gaining enough access to the kinds of high-impact practices that improve both retention and learning outcomes. The pathway analysis at San Diego State also suggested that low-income, at-risk students who lived on campus were much more likely to be retained and graduate than those who did not. As a result, San Diego State staff created financial incentives to encourage low-income students to live on campus. Leaders also reflected on what might be causing this difference in retention and graduation for those living on campus and attempted to identify features that could be reproduced in some form for commuting students. A newly designed program attempts to bridge this gap by giving commuters a taste of the learning community experience that on-campus students receive by locating some of those activities and services in the community from which most Latino students are commuting.

At Florida State, initial analyses of student pathways convinced leaders there that they needed to create much more transparent maps for the degrees they offered. The process “forced the departments to look at what courses students really needed to have and when they needed to take them.” By identifying these milestones through an iterative process of data analysis and by working with faculty, the campus now has detailed, structured maps for all degree programs. These maps support both students and departmental planning. Numbered “map terms” guide students toward a degree, while also letting departments anticipate the demand for courses. Course offerings, for example, will be affected by the number of students in “map term 3,” “map term 4,” and so on. Students, too, talk about their “map terms” as a measure of progress. That is, a student in “map term 5” might be ahead of another student who has earned more credits, but is still in “map term 4.”

Campus leaders then worked together with faculty and advisers to design a host of support structures to monitor and catalyze progress for each of the maps, customized by degree program. After grades post, Florida State staff run milestone reports, checking every student’s current major against the “map term” to see if they are on course. If students are off course, the system automatically generates an e-mail contacting the student and requiring them to meet with an adviser to strategize how to get back on track. In working with students in such a customized way, Florida State staff have seen notable gains in students’ achievement of map milestones.

Georgia State leaders have taken the identification of catalysts or momentum points toward completion to a much higher level than most. Working with The Advisory Board, Georgia State analyzed 10 years of enrollment data at a program level as well as across the institution. The result of this analysis is a new Graduation and Progression Success advising system, which tracks more than 700 markers of student success (explored in further detail in the first guide of this series). Through this system, nightly feeds from Georgia State’s student information system generate lists of which students have missed which markers. This information is forwarded to advisers by the next morning. Armed with the information, the advisers then contact students with targeted support. This relatively new program is still evolving, but it’s an excellent demonstration of the university’s proactive attempt to remove barriers and catalyze progress. As one adviser noted, “We have made a commitment to succeed with the students we have. We are committed to using data to help these students succeed, not to get different students.”

**SEGMENTING AND CUSTOMIZING STUDENT SERVICES**

Historically, many colleges have used what might be called a one-size-fits-all approach to curriculum and instruction. They offer courses, hire faculty to teach those courses, and provide support in a kind of general way. Certainly, this model works for some students, especially those who are well-prepared and not the first in their families to attend college. But it isn’t always effective with an ever-changing student body — diverse in demographics, educational background, and a host of such non-cognitive characteristics as self-efficacy, confidence, motivation, and social capital.

Over time, the institutions profiled here have begun to segment and customize their approaches to student support. These colleges now provide targeted support systems that are tailored to students with varying needs, with low-income students and students of color perhaps the clearest entry points for segmentation and customization approaches. Combined with the pathway analyses described earlier, these proactive approaches examine the impact of decisions about policy and practice, including their intentional and unintentional effects for different groups of students.

When leaders at Florida State analyzed their dropout patterns, for example, they noticed a startling pattern: While white students followed the fairly typical pattern for attrition rates (highest in the first year then progressively lower over each successive year), black male students often posted higher dropout rates after the second, third, or even fifth years. What this told leaders at Florida State is that their overwhelming focus on the transition from first to second year missed the mark for black males, and that support for them needed to be structured across the entire undergraduate experience.
Similarly, at San Diego State, as the team works to seek out continued improvements in student success, they describe a process of “breaking down the data by so many different dimensions to make it meaningful” in informing actions necessary to improve outcomes. As a senior leader reports, “We are always trying to think of all of the variables we can that would describe the differences and design interventions to address the issues. We try to put up high levels of support in different ways to serve different populations.” San Diego State’s programmatic interventions cater to several groups of students, with on-campus teams working to ensure that interventions are reaching the right students in time.

Georgia State’s summer bridge programs include another interesting example of segmentation and customization. Rather than focusing on underprepared students only between the high school senior year and first year of college — as do the bridge programs at most universities — Georgia State offers a Summer Success Academy following freshman year. The academy is a seven-credit hour, seven-week summer class that takes a group of students identified as being significantly at-risk based on their first semester performance. In the most recent year, 132 of 135 students completed the program, with a subsequent fall semester GPA of 2.95 — compared with a 2.93 GPA for all sophomores.

**Evolving a Culture of Inquiry and Improvement**

At each step of the way, leaders at these institutions have utilized data, analysis, and the generation of insight to create the conditions for the fundamental redesign efforts that have contributed to their impressive results. Rather than randomly adopting interventions that have been successful elsewhere, these institutions are using data to identify barriers, create insight, and foster a sense of ownership over changing outcomes. This culture is palpable at these institutions.

UW–Eau Claire’s story might be especially useful to leaders in colleges that are in the beginning stages of evolving a culture that assumes greater responsibility for student success. As noted earlier, the initial efforts of campus leaders to use data to heighten concern and action on student success weren’t very successful. But rather than revert to end-runs or administrative fiat, campus leaders embraced the challenge of engaging faculty and staff. Through a series of intentional events unfolding over a multi-year period, institutional leaders began to see progress toward a culture of inquiry and improvement. It was essential to this evolution that the innovation not be a top-down approach. Rather, leaders accessed and energized their front-line practitioners to help identify barriers and strategize possible efforts to catalyze progress. As mentioned earlier, one leader noted, “We’re not telling them where the problem is. They identify the problem, and we encourage them to solve the problem.” This clearly creates ownership over student success outcomes among faculty and deans and often produces superior interventions. As one university leader noted, “If you let them come up with the solution, they will come up with much better solutions than we could.”

When Georgia State leaders were asked how they’ve achieved their impressive improvements in graduation rates with incoming cohorts of students that were increasingly diverse, lower income, and of similar academic preparedness, their responses were quite interesting. They reported that, “We don’t do much that’s unique, but we do it at scale; and we are intentional about doing things differently and keeping student success data at the center of the conversation.” Georgia State leaders also reported dedicating funds for staff to design strategies to improve the outcomes of student groups — another hallmark of their evolved culture of inquiry and improvement. Finally, they realized that they needed to “help people understand that there were certain policies that were producing the negative outcomes. These people are student-centered, but didn’t realize the effects of the policies on the outcomes. Data helped them see these relationships.”

“You can’t have a culture built on data if you don’t have the personal relationships to support them and make meaning of them.”

— Team member, Florida State University

Florida State’s evolution toward a culture of inquiry and improvement emphasized building a sense of a “personal touch” to complement the more technical side of analyzing data. They also focused on creating user-friendly technological tools to encourage exploration. A team member stated, “Things were put into place that let casual users of data access, explore, understand, and be comfortable with the data.” But university leaders knew it would take more than just technical prowess to distill the data. Another team member noted, “You can’t have a culture built on data if you don’t have the personal relationships to support them and make meaning of them.” This process of making meaning from data is a critical feature of an authentic process of inquiry and improvement. Generating insights from data encouraged, engaged, and empowered faculty and staff by validating their extensive student-oriented expertise and integrating them into the process.

**Conclusion**

It is clear from our experiences on fast-improving institutions over the years that, used right, data can be an effective tool in evolving a culture that prioritizes improving student outcomes. Having said this, it’s important to recognize that cultural shifts don’t take place overnight. The stories of change at these colleges evolved (and are still evolving) over time — sometimes a decade or more. The good news is that measurable gains for students don’t take forever.

Along with our first practice guide, Learning From High-Performing and Fast-Gaining Institutions, we hope this guide will be helpful as other colleges pursue their own improvement efforts.
ABOUT THE EDUCATION TRUST

The Education Trust promotes high academic achievement for all students at all levels — pre-kindergarten through college. We work alongside parents, educators, and community and business leaders across the country in transforming schools and colleges into institutions that serve all students well. Lessons learned in these efforts, together with unflinching data analyses, shape our state and national policy agendas. Our goal is to close the gaps in opportunity and achievement that consign far too many young people — especially those who are black, Latino, American Indian, or from low-income families — to lives on the margins of the American mainstream.

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