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USING DATA TO MAKE BETTER BETS AT GEORGIA STATE UNIVERSITY

When Mark Becker became president of Georgia State University in 2009, he found a “university that wasn’t of the city.” The institution, with 32,000 students, had dropped a goal in its strategic plan that stated the Atlanta university would do research relevant to the city and region. Without that objective, Becker believed Georgia State would look like any other research university. The new president restored the goal and challenged the university to enroll more students who reflected the diverse population of its home.

Now, just six years later, the university’s undergraduate enrollment is evenly divided between African American, Hispanic, and white students. In the last five years, the number of degrees conferred annually by the university has increased by 26 percent as graduation rates have steadily improved. During the last decade at Georgia State, the graduation rate of its African American and white students has doubled and the graduation rate of its Hispanic students has tripled.

What makes Georgia State’s transformation—increasing access and graduation rates for low-income students—especially significant is the story of how robust data and evidence informed the decision making that helped lead to the advances.

Innovation in the Midst of Budget Constraints

Today, more than half of the incoming class at Georgia State receives a Pell Grant, up from just one-third of first-year students in 2008. During the same time that Georgia State was attracting students with more financial need (a third of the university’s students come from families making less than \$30,000), cuts totaling some \$19 million annually to various state and federal aid programs made it more difficult for the university to provide assistance to those students in order to cover their tuition bills.

As a result, the number of students with unmet financial need grew by 31 percent between 2010 and 2011. For some students, the gap between the tuition bill and what they received in aid was more than \$15,000 annually.

What worried university officials even more was the close correlation between unmet need and academic performance. Of Georgia State students with less than \$3,000 in unmet need, nearly 60 percent have a GPA over 3.0. But of students with unmet need between \$12,000 and \$15,000, the

percentage of students with a GPA over 3.0 is only 40 percent.

Georgia State officials knew federal and state lawmakers were unlikely to restore aid dollars, so the university decided to use its limited budget where it would do the most good. By mining student data on performance and financial aid, the university conducted small experiments to determine which interventions with specific groups of students would generate the biggest gains in retention and completion rates. “We pilot a program, measure results, and then revise the idea based on those results,” Becker said. “If something works, we try to scale it up as soon as possible.”

By scouring student data, university officials found that some of the unpaid bills for students with good grades and only a semester or two left to graduate were as small as a few hundred dollars. “This wasn’t a problem that required millions of dollars but perhaps just hundreds of thousands of dollars to make a big difference,” said Timothy M. Renick, Georgia State’s vice provost and chief enrollment officer.

So the university tried an experiment called the Panther Retention Grant. Armed with a donation from Becker, the university provided small grants to some 200 students after they were dropped from classes for nonpayment. Those students, most of whom only owed small amounts of money, were close to graduation and had good grades. As a result of the grants, most ended up staying in school, resulting in some \$660,000 in tuition and fees for the university and higher retention and graduation rates down the road.

Kelly Erwin was one of the beneficiaries of this experiment. Erwin was on track to graduate from Georgia State University last year when the 27-year-old single mother hit a roadblock. With only two semesters of classes remaining, Erwin, an interdisciplinary studies major, had exhausted her eligibility for the HOPE scholarship, Georgia’s merit-based lottery program. She had already registered for classes, but still needed a little more than \$2,500 to cover her tuition bill. She considered taking a semester off or asking her dad for help.

Erwin was not alone in facing a looming tuition bill without a plan to pay for it. In any given semester, Georgia State typically finds itself with upward of \$20 million in unpaid bills just a day before the university is required to cut students for nonpayment. Most of those bills are paid on time, but many are not.

As Erwin was struggling to come up with a plan to cover her tuition shortfall, she received a call from Georgia State’s financial-aid office with an offer of a \$2,500 Panther Retention Grant. Her final tuition bill was \$50. She ended up not missing any classes and graduating the following spring. “Even though I had a few classes left, I’m not sure I would have made it to graduation,” Erwin said.

In 2012, the university expanded the Panther Retention Grant program, with \$600,000 in awards to more than 700 students, making the average grant less than a \$1,000.

The HOPE scholarship, funded by the state lottery, played a role in whether Erwin, like other students at Georgia State, would remain enrolled in college. Georgia State students who lose the HOPE scholarship, mostly for academic reasons, graduate at half the rate of those who never had it in the first place. So university officials tried another experiment, dubbed “Keep HOPE Alive.” This program gives \$500 grants to students who lose the HOPE Scholarship, provided they sign a contract to attend academic skills workshops and individual advising sessions. Students who participated in the program now graduate at rates twice those of their counterparts.

Part of the unmet financial need for students is not just tuition, but living expenses as well. Like most higher education institutions during the last decade, Georgia State built apartment-like residence halls with kitchens and private bedrooms and bathrooms. But the nicer facilities came with much higher price tags than old-style dorms, and because students often ate in their apartment kitchens, the living spaces didn’t promote the feeling of community or healthy eating.

So Georgia State decided to experiment with a return to the past, and in 2009, opened a new residence hall reminiscent of those from a generation ago: double rooms basically twice the size of a twin bed, common bathrooms, and a dining hall. “We built the least expensive rooms we could come up with,” Renick said. And students signed up in droves. Since it opened, Freshman Hall has filled up before other choices because students can get a room plus a meal plan for the cost of the apartment-like residence halls alone.

“I’d rather spend the money on an apartment or house after I graduate than go into debt just to live well in college,” said Samantha Harris, a Georgia State student who lived in the dorm.

Personalized Supports

Improving graduation rates begins by improving the retention of students early in the college pipeline. And some of Georgia State University’s introductory courses, like those of many other large public institutions, had high failure rates (grades of D, F, and Withdrawal). These were

large courses for freshmen and sophomores in biology, chemistry, political science, accounting, and physics that were often gateway courses to a major.

If students didn’t perform well in one of these classes, it was highly unlikely they would succeed in their chosen major, requiring them to switch majors partway through their second year in college or drop out of college altogether. The size of the classes kept professors from providing one-on-one instruction to the number of students who needed it, and the university’s resources to provide professional tutors were limited.

Once again, the university conducted an experiment using financial aid. In this case, the university decided the way to provide tutors was to use students whose financial aid packages required them to work for the university. Rather than assign work-study students to the library or dining halls, the university reviewed the grade rolls of courses with high rates of D, F, and W’s to find work-study students who had done well in the classes in previous semesters. Using federal dollars, the university hired and trained these students to sit in on the course they had successfully completed, with instructions to get to know the students and faculty members and tutor the students in the class.

The university tracked participation in the tutoring sessions using swipe cards, so they would know who attended the meetings. It found that first-generation and low-income students, who typically don’t ask for help from professors, were more likely to accept tutoring from a peer. The average course grade for those students who attended at least three “supplemental instruction” (SI) sessions during a course was almost half a letter grade higher than for those who do not attend.

Some 9,700 students went through supplemental instruction in more than 20 different courses in 2013-14. The program has helped increase the retention rates of low-income and minority students the most (see Figure 1).

One Year Retention Rates of First-time, Full-time Freshmen by Supplemental Instruction (SI) Participation and Ethnicity

		Cohort Year					
		Fall 2007	Fall 2008	Fall 2009	Fall 2010	Fall 2011	Fall 2012
Non-SI Participant	Hispanic	86.5%	84.5%	83.5%	83.8%	86.4%	83.8%
	Non-Hispanic	81.5%	82.9%	83.5%	82.3%	82.6%	83.0%
	White	77.3%	77.1%	77.7%	76.3%	76.9%	75.7%
	All Race/Ethn	81.8%	83.0%	83.5%	82.3%	82.7%	82.9%
SI Participant	Hispanic	91.7%	70.0%	100.0%	95.5%	88.6%	94.1%
	Non-Hispanic	89.4%	90.5%	90.8%	87.5%	85.3%	85.6%
	White	90.5%	76.2%	84.4%	84.7%	78.0%	84.1%
	All Race/Ethn	89.6%	89.0%	91.2%	87.8%	84.8%	87.1%

Figure 1

One side benefit is that the graduation rate of tutors also increased, by 10 points, mostly because they were engaged in an academic job rather than working in a dining hall or answering phones in an office.

Data-driven Decisions

Georgia State's laser-like focus on using predictive analytics to improve student outcomes begins with its advising system. The web-based advising system draws from a database of 2.5 million grades of Georgia State students over the past 10 years to show students the classes and majors they're most likely to succeed in, based on their grades in previous courses. The system allows students to track their progress and gives the institution access to department and course-level data that alerts officials to courses students are failing at high rates or taking in the wrong sequence. Graduates in the spring of 2015 completed their degree requirements with six fewer credit hours, on average, compared with seniors two years prior.

The tool also includes Major Matcher, which reviews a student's course grades and—using historical Georgia State data—suggests majors in which the student is most likely to succeed. In addition, the platform draws live data of the open jobs matched to specific majors. As a result, the number of students who are undecided about their major at the end of their first year dropped 40 percent over the past two years.

Over all, Georgia State's use of data analytics to drive decisions has allowed the institution to make significant progress toward Becker's goal of the university reflecting its home. Its six-year graduation rate has risen from 32 percent in 2003 to 54 percent in 2014. The university graduates more Hispanic students than any other institution in the state. And the Education Trust recognized the university for having the second highest increase in graduation rates for underrepresented students in the nation. "Our goal," said Becker, "is to show higher education how to create a future where you can thrive as a research university and educate the full spectrum of America."

Guided by the belief that every life has equal value, the Bill & Melinda Gates Foundation works to help all people lead healthy, productive lives. In developing countries, it focuses on improving people's health and giving them the chance to lift themselves out of hunger and extreme poverty. In the United States, it seeks to ensure that all people—especially those with the fewest resources—have access to the opportunities they need to succeed in school and life. Based in Seattle, Washington, the foundation is led by CEO Sue Desmond-Hellmann and Co-chair William H. Gates Sr., under the direction of Bill and Melinda Gates and Warren Buffett.

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