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JR: BEST ON THE STREET

Colleges Mine Data to Help Students Stay on Course

Companies use 'predictive analytics' to guide student choices

By MELISSA KORN

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Alert: You will fail this class.

The warnings may not be quite so blunt, but students at Austin Peay State University in Clarksville, Tenn., are now able to see how well they might do in any single course before ever enrolling.

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John Weber

When students register for classes each semester, they see a list of classes that are ranked on a scale of one to five stars, based on how useful each course is likely to be for their major or their graduation requirements, and how difficult it might be for them.

This feature reflects a growing reliance on predictive analytics in higher education to increase retention and graduation rates at a time when outcomes are under scrutiny and funding for additional academic support is hard to come by.

Universities already know a lot about their students, from their performance on standardized tests to the sequence in which they took biology classes over four years on campus. Now they're putting it to use.

"We're always looking for the silver bullet, what's going to get us the best retention rate, the best success rate," says Matthew Wawrzynski, an associate professor of educational administration at Michigan State University's College of Education. Mr. Wawrzynski says he sees data analytics as a tool to enhance the advising process, but not the only resource.

John Baker, president and chief executive officer of Desire2Learn Inc., an education technology company, says his business is seeing increased demand for analysis of student data. Colleges, he says, are "really hungry to make

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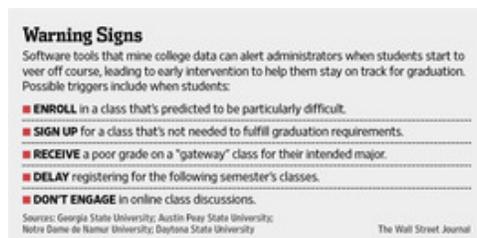
A High School Without Textbooks

Can Games Help Improve Education?

sense of the data, to pull it together and gather insights that can enable them to make the education experience more effective." More than 50 schools have signed up for the company's Insights analytics tool, introduced in May, he says.

Degree Compass

At Austin Peay, administrators helped develop and implement Desire2Learn's Degree Compass in 2011. (The project was highlighted in an August White House release tied to the president's college-affordability initiative.) The compass gives assessments of a student's likely success in a given class based on the student's past performance, including in high school, as well as how other students have fared in that class over time.



The system is accurate in the guidance it gives, says Tristan Denley, former provost at Austin Peay and now vice chancellor for academic affairs at the Tennessee Board of Regents. This is borne out in the grades of both students who take recommended classes and those who take classes against the system's recommendation. Five stars means the class is a good bet. One star, and you might want to opt for that lower-level biology lecture first. Advisers can help

students understand each ranking—when, for example, arranging for a tutor or taking a lighter course load might be a good idea.

In the two years since Austin Peay implemented the system, the proportion of A's, B's and C's has increased dramatically, in part because students are taking the advice and avoiding courses deemed a poor fit. But students who accept the challenge of a tough class are also making gains. The gains have been most substantial among low-income students, many of whom previously had little outside guidance on course options.

Too Easy?

Some administrators warn that predictive analytics aren't a silver bullet and that even well-intentioned academic advisers could misuse the information and guide students toward easy options. This might improve a school's graduation rates, they say, but it would also leave students with little opportunity to experiment or push themselves academically.

"Anytime you intervene, you set up incentives for institutions and professors to just get people through [the system]," says Gary Rhoades, director of the Center for the Study of Higher Education at the University of Arizona. "That's a different incentive than challenging people to take on new knowledge and stretch themselves."

Mr. Rhoades warns against making too many conclusions about a student's grade in a single class. Extenuating circumstances aren't captured by the analytics, he says. For example, a student who wants to study engineering might land a C in calculus because the professor was inept, or the student fell ill partway through the semester; such a student might still be perfectly capable of succeeding in the math-heavy major.

"Probability is not destiny," Mr. Rhoades says.

In defense of predictive analysis, Mr. Denley, the Tennessee regent, says students can lose their way amid all of the courses a school offers, especially if they're unsure which courses fulfill graduation requirements or fit their learning style. He describes Austin Peay's approach as "choice architecture," noting that students can still enroll in any class but are doing so in a more thoughtful way. "It's designed to empower choice, not to restrict or determine it."

'Gateway' Classes

Georgia State University, drawing on a record of 2.5 million grades, last year determined that how students perform in a "gateway" class in each major can be a fair predictor of the student's overall success in the program. If a student doesn't earn a determined minimum grade in that single course—often in the B range—chances are he or she won't cut it in the major and won't graduate on time.

The school thinks, for example, that an introductory math class is a good indicator of a student's likely success in its popular but selective nursing program, for which students apply in sophomore year. Now advisers can begin conversations earlier with students who do poorly in the math class, giving the students time to pursue other majors without wasting years of tuition.

Advisers are also notified if students enroll in courses not necessary for graduation, an effort to keep student costs in check by ensuring they don't sign up for more credits than needed.

Georgia State is evaluating the results of this first year's efforts, but President Mark Becker says he's already seeing positive effects, including more engagement between students and advisers. The system was developed in partnership with the Education Advisory Board and costs Georgia State about \$70,000 a year.

Help Where Needed

Schools aren't just interested in improving student outcomes; they're eager to find the most cost-effective means of doing so.

San Francisco-based InsideTrack Inc. uses analytics to help schools maximize enrollments and graduation rates, in part by identifying which students will benefit most from help in navigating college life and the academic resources available. The company works with Austin Peay and Indiana State University, among other schools. It analyzes everything from test scores to how far in advance a student registers for classes.

InsideTrack estimates that client schools break even on their investments—which range from a few hundred thousand dollars to a few million dollars—in 12 to 15 months, thanks to the additional tuition schools receive from students who would have otherwise dropped out.

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