Dimensional INSIGHT®

10 Challenges Facing Higher Education

And how analytics can help

Introduction

Higher education has always collected data. For a long time the question was not how to collect the data, it was how to use the data that's been collected. And with millions of data points related to the many facets of higher education, the answer to that question was not easy to figure out.

But colleges and universities have begun to turn a corner in terms of what to do with their data, and there is now a roadmap unfolding that lays out the path to successful enterprise-wide use of data.

This book will serve as a guide along that path so your institution can keep up with the work that's been done in a successful way at institutions of higher education across the world.

Challenge 1: Approach to data

While most colleges and universities are looking to data to help them make better decisions for the benefit of their institution and the students within it, not everyone in a campus environment is comfortable with the idea of using data.

Some schools recognize this and generate buy-in before they make a shift from simply collecting data to using the data to make decisions. How does the work a school wants to do with data align with its mission, and is it what's best for students?

How analytics can help

No organization in any industry benefits from a haphazard leap into the world of analytics. A school with an enterprise-wide IT approach incorporating all of its different constituencies is more likely to find success in using its data. But the work doesn't stop with incorporating a solution.

Schools must govern their data, making sure a data point from one part of campus is viewed and understood the same way elsewhere. If a school is trying to measure student success, what defines that success? It might be graduation rate, but some students enroll in a school with the intention of transferring after a certain number of years. Does that mean the student did not find success at the school?

Analytics is a solution when the right data is being applied in the right way, and to do that, a school needs to have the right people in place.

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Challenge 2: Curricular planning

What are the hottest majors? What do students need to know to succeed in finding a job upon graduation? What courses should we be offering that we aren't?

University administrators are constantly assessing these types of questions as they work to make sure that their school's offerings are on par with—or beyond—the hundreds of other schools potential students have to choose from.

How analytics can help

Many schools use data to plan the courses they will offer, which affects staffing and budget. They keep an eye on whether a course is trending downwards in terms of enrollment; or if the opposite is true, and there are certain courses that are exploding in popularity and should be offered more.

There is software available as well that can help students with their course selection. A university can use the tool to compare one student's transcript with thousands of others to figure out what courses and majors might be best for that student to pursue.

Challenge 3: Space planning

College and university campuses are changing, and the way schools look at their spaces is changing as well.

With an emphasis on mixing the traditional lecture hall with more collaborative and interactive workspaces, schools have many details to consider when they look to re-work existing spaces. But many bigger colleges are looking to expand their footprints as well, something that might make the school more enticing to an applicant or give the school an opportunity to make a bigger impact on its community.

How analytics can help

When a school is looking at real estate, it will often use publicly available geographic information system (GIS) information for data points such as the size of a piece of land or its zoning type.

That information can often be integrated into the technology schools use to manage the spaces they already own. Colleges and universities track metrics such as how much it costs to operate a building, or how much energy that building consumes. Some schools have what are essentially visual databases within their facilities departments that include floor plans and information about how often spaces are used, which leadership can examine when considering future property development.

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Challenge 4: Efficiency

Some of the work that can be done by data analytics is work that has been done for years, either by hand or through the use of spreadsheets. But those days are gone.

There is simply too much data to gather manually. In addition, IT departments have enough on their plates without having to put together reports for a school's decision-makers when there are easier ways.

How analytics can help

An automated solution is a must for gathering and analyzing the amount of data institutes of higher education need in order to succeed. These solutions can produce, in minutes, reports that previously would have taken hours to complete.

They can instantly calculate numbers regarding budget or enrollment, and can even help with time-consuming tasks like hiring. Some software can search through resumes for key terms related to the job the university is looking to fill, to help pare down the number of applicants who will advance to the next round of interviews.

Challenge 5: Research

Some of the most time-consuming work in which professors engage is related to research. At research universities, it's what they do and it's what they teach, as students at all levels learn the skills they will need to conduct research in their field.

Those skills, though, are changing as technology advances, and just because the work is time-consuming doesn't mean it always has to be.

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How analytics can help

Artificial intelligence has made significant gains in recent years, and the data being gathered and analyzed by research professors is benefitting from it. In the medical field, a machine can help researchers with the thousands of drugs being combined in a lab to find a treatment option. In the humanities, artificial intelligence is being used to help decipher handwriting in ancient texts.

Artificial intelligence can be used in other time-saving ways in a university environment, whether it's helping to grade multiple-choice tests or in 'bots' that answer questions posed through a school's website. Perhaps the most important aspect of artificial intelligence on a college campus is its exposure to students who will soon graduate, and become the ones shaping the future of this emerging technology.

Challenge 6: Managing Debt

As escalating numbers of high school graduates worry whether attending college is worth the debt they are going to incur, colleges and universities are increasing their efforts to help students manage the inevitable debt that comes along with a college education.

It's no small problem. Student debt in America totals more than $1.5 trillion, and it is growing by tens of billions of dollars per year.

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How analytics can help

Part of the problem with student debt is too many students are graduating without the appropriate skills to find a well-paying job that can help them re-pay their student loans. To combat this, colleges and universities are using data to better prepare their students for the working world. By figuring out which skills students need most upon graduation, they can re-design their curriculum, their spaces, and make sure students are in the best position possible to find work in their field of study.

Sometimes when a school decides a student needs academic help, the same data it used to make that determination can help the school and student decide if a different major might better set the student up for post-graduation success.

Challenge 7: Identifying at-risk students

Accrediting agencies and state funding place a high emphasis on student performance when evaluating higher education institutions. That means retention is always on the minds of administrators.

The best schools, of course, are the ones who are working to address issues such as retention regardless of funding or evaluations. It aligns with the school's goal of doing what's best for the student, in addition to helping the school's bottom line, since enrolling a new student is costlier for a school than retaining a current one.

Accrediting agencies and state funding place a high emphasis on student performance

How analytics can help

Many schools start by trying to determine what a successful student looks like. They then use the data of a successful student's performance at various points during the school year to look for opportunities to correct the path of a less successful student.

Many schools have incorporated analytics into their advisor programs. Dashboards can alert advisors to students who are at-risk—the dashboards can even be color-coded to show students who are in good shape (green), on a downward trend (yellow), or at-risk (red). Then schools can determine at what point they want to take action and intervene in order to make sure that student stays on track and enrolled.

Challenge 8: Monitoring student well-being

Sometimes the risk of losing a student isn't related to academic performance at all, and can only be measured through student behaviors. Depression is a leading cause of students dropping out of college and, if not treated, can lead to other mental health problems or even suicide.

Colleges and universities are sensitive to this information and are looking for ways they can identify tell-tale behaviors beyond relying on careful observation.

Monitoring student well-being through the use of analytics.

How analytics can help

Most schools have some kind of key card system that can help them track of data points such as attendance in class or where on campus a student spends most of his or her time. Some are experimenting with wearable data, issuing trackers that can help monitor metrics like a student's heart rate or sleep patterns. The information can be used by the student to track his or her physical health, but it is also available to view by faculty.

Many schools have also placed an emphasis on surveys that gauge a student's well-being. They check in often to take a student's figurative temperature and see how they're doing, especially in potentially vulnerable moments. Two examples would be following a freshman orientation and during finals. The compilation of this information helps provide a complete set of data about a student's well-being that can help an advisor figure out whether a student needs more than just an occasional check-in. Some schools have also started to collect data regarding wait times for students wanting to talk to a doctor or seeking mental health treatment to make sure they don't overlook what could be a roadblock to students seeking the help they need.

Challenge 9: Enrollment

Colleges and universities have always been competitive when it comes to enrollment. But as students become more selective in their choices, with some even choosing to build credits in non-traditional ways while they earn a living, the game is changing.

Schools are looking for any advantage they can get to stay ahead of the competition when it comes to enrolling the students who are no longer coming to them in droves.

How you can use analytics to address this trend

If the students aren't coming to them, the schools need to find the students. To do this, many schools are employing predictive analytics. It costs money to travel to a city and try to recruit students. Schools that do this blindly in the hopes that they'll happen upon interested applicants often find that it's not worth the expense. If they can use predictive analytics to get a sense of what the makeup of their student body is, and where it is worth spending their time to find students, they will meet with greater success.

Predictive analytics software uses past experiences to inform the future. When it comes to enrollment, the software can provide a college with maps that show which markets they are drawing from and which markets could be a target next. Depending on the data a school is able to gather, they might even be able to tell which schools are their main competition when it comes to certain markets.

Challenge 10: Sharing data

Sometimes schools can get protective of their data. There are privacy concerns related to the students from whom the information was gathered, of course, but even within a college campus, some departments can be unwilling to share certain pieces of data with another.

When other schools are involved—whether it be for research purposes or for a student looking to transfer credits or an entire transcript—the process can become even more complicated.

How you can use analytics to address this trend

Some colleges and universities are looking into changing the way data is shared, trying to re-set the expectation that certain pieces of data can and should be shared. Higher education as a whole is looking into how blockchain technology can be used to share data between universities, such as student transcripts or credentials.

The same trust and privacy worries exist with blockchain, but proponents of the technology argue that those issues are offset by the dependability of the data, since it is transparent and unchangeable.

It isn't just student data that can benefit from blockchain, either. Researchers—whether they are students or professors—can use blockchain to share their intellectual property while maintaining control of it.

Once that data is made accessible to different areas of a university, administrators can use analytics to tie that data together and get a holistic view of each student, or of finances, or academics, or other areas of the institution.

Sharing Data

Dimensional INSIGHT®

About Dimensional Insight

Dimensional Insight® is a leading provider of analytics, data management, and performance management solutions, offering a complete portfolio of capabilities ranging from data integration and modeling to sophisticated reporting, analytics, and dashboards. Founded in 1989, Dimensional Insight has thousands of customer organizations worldwide. Dimensional Insight consistently ranks as a top performing analytics organization by customers and industry analysts in its core market segments including healthcare, manufacturing, and beverage alcohol.

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