



Blackboard®

# Analytics for Higher Education:

Solving Six Critical Issues with Blackboard Analytics

Higher education is under pressure - to increase enrollment, ensure students graduate, reduce tuition and costs, consistently improve the learning experience, be accountable and transparent - among many others. These pressures are pushing colleges and universities to evolve and re-think the “way things have always been done” and to drive towards new solutions to solve these challenges.

Many college and university leaders are using data analysis and visualization to question the status quo and develop effective solutions. Achieving these insights and information requires not a single report from a single system, but rather the ability to access, share, and explore institution-wide data that can be transformed into meaningful insights at every level of the institution.

To meet these demands, colleges and universities across the country are using solutions like Blackboard Intelligence. In these pages, we'll hear from six subject matter experts on how key institutional challenges can be addressed with Blackboard Intelligence, including:

- Student retention
- Strategic enrollment
- Learner engagement
- Fiscal success
- Effectiveness of Institutional Research
- IT's ability to support the institution

By the end, you'll understand how Blackboard Intelligence can help your institution perform with greater insight and efficiency in countless ways, throughout the organization.

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## How Blackboard Intelligence Improves Student Retention

**Terianne Sousa JD, Director, Education Services and Student Retention, Blackboard Inc.**

**Today, the future success of higher education institutions is dependent on their ability to answer urgent questions around student retention:**

- Why do our students leave? Why do they stay?
- How can we ascertain students' individual risk levels?
- What is the retention rate of different student groups?
- What retention programs will be most effective for students at different levels of risk?
- How can we track the success of retention programs?

The answers differ from school to school, but data-driven decision-making is the key to formulating solutions. Unfortunately, the information required to craft an effective student retention strategy isn't always readily accessible.

Blackboard Intelligence provides institutions with detailed insight into their unique student populations, so they can identify and engage at-risk students quickly, accurately, and timely enough to make an impact. With this information, the school may then implement retention programming to reach specific student populations in a targeted and cost-effective way.

### **Know Your Students Contextually & Demographically Historical data from institutions' student information systems**

(SIS) can be extremely useful when identifying patterns of student risk. Blackboard Intelligence helps schools improve retention through targeted analysis of this data that isn't possible in the SIS. This allows schools to cross-reference students' demographic attributes with their performance. Based on this analysis, institutions can influence specific student groups' performance through targeted, proactive student success initiatives.

For example, knowing that students from one high school or specific geographic area tend to do poorly in their first math course allows a school to institute programs targeted at helping those students succeed – rather than waiting for them to struggle. An institution might work with the high school to improve their math program, provide professional development to help faculty deal with students’ challenges in those classes, or even implement mandatory math tutoring sessions. Recognizing a challenge before it impacts student success can be a game changer.

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It is important to know not only which students are at-risk, but also why they are at-risk. This allows schools to better understand when to reach out to those students throughout the student lifecycle. Consider, for example, the time between a learner’s sophomore and junior years – a common period for transfers. What details can an institution use to encourage students to stay? Is it an issue with a particular program – or the lack of an available program? Did students change their minds about their goals? Blackboard Intelligence helps schools anticipate changes, but also make decisions based on patterns in their populations, and then monitor and measure the success of these programs.

## Financial Aid Implications on Student Retention

Financial aid is a crucial consideration when it comes to student success. In fact, financial burdens can cause students to stop out or drop out of school even if they are performing well academically.

Blackboard Intelligence allows institutions to identify which students face financial pressures. By finding students who have a high preponderance of loans or unmet financial need, schools can provide appropriate assistance, such as scholarships or grants, in order to help individuals focus on grades and not money.

It is also beneficial to know which students are reaching their financial aid maximum limits – or are in danger of losing financial aid because of a failure to meet Satisfactory Academic Progress. This information allows an institution to identify struggling students and put programs in place to make the student aware of their situation, as well as finding ways to help students succeed academically.

Financial aid applications are another useful data source, helping to identify students who won’t be able to stay in school because their financial aid status won’t allow them to continue their education from year to year. Knowing who falls into this group allows an institution to take proactive measures, saving students from dropping out simply on account of administrative “red tape.”

Tracking scholarship requirements not only provides a way for schools to know who is fulfilling their scholarship requirements, but also allows for tracking those who aren’t. With better planning for scholarship appropriation, institutions can ultimately increase student retention and graduation rates.



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## Better Data, Better Outcomes

As institutions seek to leverage analytics capabilities and improve student retention and graduation, they must recognize an important reality: it's not enough to simply have the technology. Schools must be prepared to ask the hard questions and challenge "campus legends," the sort of long-standing assumptions that aren't actually grounded in data. Schools must be willing to say, "Our old approach hasn't achieved optimal results, and we need to improve it." In short, schools must be willing and able to collect and analyze the data – and ready to make changes based on what they find.

Making decisions based on detailed, actionable, and empirical data allows institutions to spend their budgets in the most effective ways possible.

Making decisions based on detailed, actionable, and empirical data allows institutions to spend their budgets in the most effective ways possible. As institutions implement programs to help students, the retention and graduation rates will go up. As retention and graduation rates rise, more funding and more tuition dollars will be available to reinvest in programming and infrastructure oriented toward student success. In this way, data-driven decision-making becomes the key to a virtuous cycle of continuously improving student retention programming and positive student outcomes.

### About the Author

Terianne is a student retention specialist with more than 15 years of experience in education and higher education management. Her vast knowledge on the subject comes from her experience in academic advising, faculty evaluation, career services and online teaching. As part of the Blackboard team, Terianne serves as a subject matter expert for student retention and works to provide student retention content that motivates continuous improvements for all Blackboard solutions. Prior to joining Blackboard, Terianne served as Director of Faculty Evaluation at Strayer University. There, she led a faculty evaluation program to ensure teaching met university standards, as well as oversaw the implementation of an academic advising program that resulted in improved retention of the online student community.



## How Blackboard Intelligence Helps Improve Strategic Enrollment

**Phil Adams, Principal Strategist, Blackboard Inc.**

**A school's student body lies at the heart of its purpose, identity, and success, making enrollment management critical to institutional stability.**

When students enroll, succeed, graduate, and embark on fruitful careers, both the students and the institutional benefit; making enrollment management critical to institutional stability. As colleges and universities achieve a stronger reputation and better performance metrics, they are able to focus their resources on the strategic development of personnel, programs, and campus facilities rather than on retention, or recruitment challenges.

But how can schools identify, understand, and enroll their ideal students?

The answer lies in Blackboard Intelligence.

## Understanding Applicants

With Blackboard Intelligence, schools can analyze enrollment data and trends over a span of years. This rich historical data makes it possible for institutions to accurately predict the results of recruitment campaigns based on a variety of student attributes. Through Blackboard Intelligence, schools can understand which students are most likely to apply, which ones are most likely to be admitted, and which ones are most likely to enroll – all based on past indicators.

With this information, enrollment offices can make better use of their resources, focusing their efforts on where they will be most successful in recruiting the quality and types of students they are looking for.

For most enrollment offices, the urgent need for this information is clear. Many offices work with highly constrained resources – both in terms of staff and budget. By concentrating on recruiting students whose profiles match the institution’s strategic goals, it is possible for enrollment offices to perform much more effectively, focusing resources with laser precision and tracking the results of those decisions. With this information, a school can implement a communication or marketing strategy and Blackboard Intelligence enables the institution to understand whether enrollments, applications, or the admitted pool increased as a result.

Once the institution identifies this gap between admittance and enrollment, they can then strategize accordingly

## Tracking Enrollment Trends

In any outreach effort, it’s important that an institution be able to assess whether their efforts are making an impact. Blackboard Intelligence allows schools to look historically at expenditures and results and make decisions based on the insights they gain.

Take, for example, a high school with 300 applicants to a given college. If 50% of those students are admitted but only 10% of those enroll, what happened to the other 40%? Understanding the answer is crucial. Once the institution identifies this gap between admittance and enrollment, they can then strategize accordingly – focusing a recruiter on that population, creating a targeted communication plan or holding events at that high school to boost enrollments. If they could increase their yield by 5-10%, those students could result in significant revenue the first year, and every year after that a student is retained.

Using average tuition and fees, this equates to over half a million dollars in increased revenue a year.<sup>1</sup>

If an institution is trying to increase their enrollments, knowing the demographic breakdown of students most likely to enroll, retain and succeed is crucial. For example, using Blackboard Intelligence, geospatial mapping can allow schools to make even more targeted recruitment efforts - analyzing states, cities or individual zip codes. This kind of precision recruitment in combination with high school performance, test scores or any of the other hundreds of predefined attributes becomes invaluable.

## Enrolling for Success

All too often, schools spend a lot of time and money recruiting the masses and focus little of their resources on profiling and recruiting students predicted to succeed - a critical mistake.

Blackboard Intelligence allows schools to recruit with more foresight. Instead of treating the beginning of a learner's freshman year as the end-goal, enrollment offices use Blackboard Intelligence to determine which students are likely to stay in school, re-enroll, and ultimately graduate. By profiling rich historical and demographic indicators, institutions can ensure that prospective students will be a good fit and more likely to succeed. By marketing these students accordingly, colleges and universities will improve students success rates and their own future.

### About the Author

Phil Adams, Principal Strategist at Blackboard, is responsible for working with clients to provide guidance and support around the strategic use of data. Phil has worked in Higher Education for over 30 years serving in a wide range of positions including Vice President of Enrollment Management and Student Services, Dean of Student Affairs, Director of Information Systems, Director of Graduate School Operations and Faculty Member. He also served as the PeopleSoft Implementation Team Lead at Towson University implementing PeopleSoft 8.0 Learner/HR and Finance Modules and managed upgrades through version 9.0.



## How Blackboard Intelligence Improves Learner Engagement

**John Whitmer, Ed.D., Director of Platform Analytics and Educational Research, Blackboard Inc.**

How can we predict learner failure while a learner is in the middle of a course, with enough advance notice to change their outcome? What can we do to identify course materials and activities that are particularly effective?

Learner engagement is one of the most important components of long-term student success. The emerging field of Learning Analytics has begun analyzing how learners interact with course materials, learning activities, and one another, to help educators develop a more accurate and real-time understanding of which students may be at risk of failing a course.

Further, Learning Analytics can reveal the impact of different course design choices on learner achievement. But how can schools measure engagement and assess risk level without investing in a lengthy and expensive data integration and discovery process?

For many schools, the answer is Blackboard Intelligence paired with Blackboard Learn, Blackboard's learning management system (LMS). The LMS is the most heavily deployed academic technology in the field of higher education – in fact, a recent study of undergraduate learners found that over 87% of learners used the LMS over the past year, with 28% using it in all of their courses. (Dahlstrom and Bischel, 2014).

By using Blackboard Intelligence to analyze this data, instructors, departments, and entire institutions can generate powerful insights into how students are learning

Instructors use Blackboard Learn to augment face-to-face courses, to create ‘flipped classroom’ environments, or to offer fully online courses. All learner activity in the platform is tracked, so educators can see how learners interact with and respond to learning materials within courses, across courses, and across terms.

By using Blackboard Intelligence to analyze this data, instructors, departments, and entire institutions can generate powerful insights into how students are learning – and immediate steps that can be taken to improve learning outcomes.

## **Immediate & Detailed Understanding of Learner Course Interactions**

By adding the Blackboard Intelligence platform to Blackboard Learn, campuses gain the ability to analyze LMS use across the institution. Instructors can analyze the way learners engage with courses in fine-grained detail. Our Analytics platform integrates seamlessly with the Blackboard Learn to gather data and generate insights into learners’ activity. In addition to information from the LMS, Blackboard Intelligence brings in learners’ demographic data and prior educational experience to create a comprehensive portrait of the learner that can be used to provide holistic recommendations.

LMS activity is a significant predictor of learners’ grades in a course. While conventional demographic and prior academic experience variables predict 3-5% variation in learner grades, Blackboard Learn data can predict up to 50% of that variation, as this data is immediate, contextual – and most important, can be acted on immediately.

## **Improving Course Design**

The benefits of Blackboard Intelligence combined with Blackboard Learn can also be used to improve course design practices.

By analyzing data on students’ LMS activity, educators can examine patterns in learners’ interactions with course resources and their relationship to learner success. If every learner who receives an “A” on five quizzes also earns an “A” in the course, for example, the instructor would have evidence that those quizzes are a strong indicator of overall success. But if no relationship between the quizzes and final grades were visible, the teacher would have reason to believe that the quizzes may not be a useful way for learners to spend time.

It is also possible to study changes in course design over time. If a school implements a new instructional design, educators can compare learners’ achievement to their outcomes in past classes and adapt or develop the course accordingly.

## **Taking Advantage of Blackboard Intelligence and Blackboard Learn**

Once faculty sees that the LMS engagement translates to learner success, they are typically eager to leverage the powerful insights that Blackboard Learn and Blackboard Intelligence make available to them. In fact, some educators even redesign their classes in order to collect better data – and ultimately achieve better results.

From learners to instructors to the entire institution, Blackboard Intelligence and Blackboard Learn can make a powerful impact at every level of the college or university. When educators employ Blackboard Intelligence to analyze and encourage learner engagement, they give both their institutions and their learners the tools to succeed.

## About the Author

Dr. John Whitmer is the Director of Platform Analytics and Educational Research at Blackboard. His research interests include predicting at-risk students and creating effective interventions to improve their performance using data captured by student interaction with academic technologies (LMSs, Web Conferencing, MOOCs, etc.). John has participated in six large-scale studies, including support from the Gates Foundation and the National Science Foundation. He holds a Doctorate in Educational Leadership from UC Davis and a Master's Degree in Sociocultural Anthropology from UC Davis.



# How Blackboard Intelligence Improves Fiscal Success

## Lynne Culverhouse, Senior Consultant, Analytics, Blackboard Inc.

Fiscal success in higher education today has expanded beyond the traditional distinct set of quantifiable metrics used to describe financial status to include the culture and financial systems that embrace the elements of accountability, transparency, efficiency, responsiveness and inclusiveness.

Fiscal success is no longer just the responsibility of the business officer, but rather spans to individuals and departments across the entire institution. That's why Blackboard Intelligence provides the decision-making tools to make fiscal success a campus-wide partnership. Using student cost data, human resources data, financial data, and more, Blackboard Intelligence helps institutions paint a detailed and holistic picture of their fiscal environments, finding the best way forward and promoting leadership and stewardship that encapsulate continuous financial success.

## The Impact of Comprehensive Data

Why is using analytics to track spending by department and project so powerful for institutions?

In short, insights from Blackboard Intelligence help schools improve data access, transparency, and overall accountability. As accountability, in particular, grows more and more important in the higher education landscape, analytics capabilities become essential for measuring schools' activity and performance objectively and consistently. Additionally, it is imperative that we have transparency in our strategic planning, transactions and outcomes as both public opinion and financial support for institutions increasingly depends on an institution's accountability and transparency - critical components of fiscal success.

Blackboard Intelligence supports policy-making and strategic planning with both granular data and big picture insights.

Blackboard Intelligence can also measure an institution's productivity, allowing schools to perform analytical reviews, to benchmark themselves against past performance and peer organizations, and compare spending to both goals and prior years. Through these capabilities and more, Blackboard Intelligence supports policy-making and strategic planning with both granular data and big picture insights.

A university president, for example, might not have been able to measure progress toward the school's goals in the past. If they asked for specific reports, those documents might have taken several months to complete. But with Blackboard Intelligence, Key Performance Indicators (KPIs) can be made available to the president in an online dashboard, giving them online reporting and insight on a daily basis.

## Comparing Costs and Enrollments

Enrollment trends are critical for resource allocation and strategic planning. Blackboard Intelligence goes beyond just comparing enrollment numbers to prior years – it allows institutions to use trends to estimate revenues, review programs, and examine the fiscal implications of patterns surrounding specific enrollment classifications.

Similarly, analyzing the cost of instruction for a given program or course can give institutions new insight into productivity. By studying data-points such as student enrollment and cost of faculty, it is possible to evaluate which programs are most cost-effective, whether certain courses can be effectively taught online, and when it may be advantageous to use adjunct rather than doctoral faculty (or vice versa).

Likewise, the cost of education for graduate and undergraduate students can be broken down and compared. The resources and performances of different departments can be analyzed.

Ultimately, Blackboard Intelligence gives institutions the power to unpack some of the most crucial data about their costs, activities, and capabilities to identify new efficiency opportunities. With Blackboard Intelligence, fiscal success is a matter of institutions better understanding themselves and confidently shaping their own paths forward.

### About the Author

Lynne Culverhouse currently serves as Senior Consultant, Analytics with Blackboard Inc. Combined with her experience exceeding 30 years in higher education management and specialized training, she is considered an expert in financial management, strategic planning, business intelligence, leadership, marketing and governmental relations. She is a graduate of UT Tyler, The LBJ School of Public Affairs; Governor's Executive Development Program and Leadership Tyler, Class XXIV.



## How Blackboard Intelligence Improves Institutional Research

**Aimee Cook, Senior Consultant, Blackboard Inc.**

**Higher education faces increasingly demanding reporting requirements from the federal government, state governments, and accrediting bodies.**

The data and information submitted to these bodies are no longer bound to the paper on which they were once submitted. These data become publicly available on websites and through downloads and as such, become the basis for public policy decisions and the criteria upon which institutions are profiled and ranked.

Often, it falls to Institutional Research (IR) offices to respond to these complex requirements and to ensure that what is submitted on behalf of their institutions is accurate. It is a burdensome and time consuming job, gathering data from a variety of sources, cleansing the data, and managing its integrity and format. This challenge is further complicated by the IR office's central role in data management for the purposes of both institutional research and decision-making across campus. How does an IR office ensure consistency among these different data sets? How can IR assure the integrity of business process logic over time, case after case? And how can the IR office maintain any reasonable degree of efficiency in seeing to these needs?

By standardizing business process logic for reporting and decision-making and by appropriately defining the often nuanced applications of data elements, Blackboard Intelligence helps streamline these data management tasks. This makes reporting less burdensome and makes institutional data more accessible. Blackboard Intelligence helps move the Institutional Research office beyond reporting to fulfill a far more valuable role for the institution.

## Beyond Reporting

At its heart, analytics is the process of using empirical findings to answer a question. From the starting point of a crucial question, institutions may achieve insight through a variety of approaches – from graphing of simple descriptive characteristics to the development and application of sophisticated predictive data models. Research leads to insight and action, but it all starts with a problem or challenge that requires an answer – and often, institutions rely on IR offices to ask the right questions . . . and to find the answers.

An IR office’s time is best spent conducting research, supporting decision-making and facilitating change . . . not managing data. Blackboard Intelligence makes this possible by giving researchers standardized, complete data sets with which to work and providing them with the time necessary to analyze the data. With the robust and granular data infrastructure that Blackboard Intelligence provides, Institutional Research can become an institution’s catalyst for change, providing sound analysis to identify improvements, supporting meaningful goals, and tracking the school’s progress to support institutional advancement. By giving IR access to a rich analytical platform, it is possible to lead a fundamental shift in the work and perception of Institutional Research.

## The New IR

Institutions can’t afford to have their IR offices focus on just one aspect of their needs or challenges. Instead, IR has to be prepared to examine all areas of the institution. In order to take on this responsibility and realize their potential, IR offices should be both prepared to leverage technology like Blackboard Intelligence and to cultivate connections with other offices such as Information Technology (IT) to support that technology

Partnership and collaboration with IT gives Institutional Research offices the flexibility to conduct deeper, richer analyses using a holistic data system. With this infrastructure, IR can examine issues as varied as the cost of instruction, student persistence and completion rates, factors of student engagement, and the efficacy of admissions strategies.

For schools to succeed in the current environment of heightened accountability and data-justified action, they must empower a “New IR” – Institutional Research offices that are equipped to facilitate change rather than report on it, helping to identify areas for improvement and challenging the status quo. Among the many values that IR offices have traditionally brought to institutions of higher education, above all has been the ability to interpret data, to provide an in-depth understanding of where data come from and what they mean. If colleges and universities can properly leverage the New IR, they will be positioned to achieve sustained success.

Blackboard  
Intelligence helps  
move the Institutional  
Research office  
beyond reporting  
to fulfill a far more  
valuable role for  
the institution.

## About the Author

Ms. Cook has gained expertise in strategic planning and institutional-level research, data management, and analysis through 14 years as an institutional researcher for both four- and two-year institutions. During her time in Institutional research Ms. Cook focused on analyzing student retention to inform and measure the effectiveness of retention strategies. She currently works for Blackboard Intelligence where she supports institutions implementing data warehouses and analytic resources on their campuses. Ms. Cook has also served for several years as an IPEDS trainer and an examiner for Illinois Performance Excellence, Illinois' training provider on the use of the Baldrige Criteria for organizational excellence.



## How Blackboard Intelligence Improves IT's Ability to Support the Institution

**Matt McCoin, Solutions Engineer, Blackboard Inc.**

**In today's higher education environments, students and educators generate more data than ever - and institutions want access to this data to better understand trends, patterns, areas for growth and opportunities for efficiencies.**

Access to this data is in increasing demand as institutions search for ways to help more students succeed and to make their colleges and universities more effective and competitive. Chief Information Officers (CIOs) are feeling the significance of these data requests as it's often the IT team who is called on to develop and deliver insight into this data. In order to meet these requests given limited resources, many CIOs have turned to Blackboard Intelligence to more efficiently and strategically support the extensive information needs of the entire institution.

By utilizing data from multiple systems in a comprehensive manner, institutions can inform strategy and policy as well as increase operational effectiveness in a powerful, empirical way. Blackboard Intelligence allows CIOs to aid the institution in rigorous evidence-based decision-making. By unlocking patterns, trends, and root-causes through the use of data, institutions can create better and more effective processes and strategies.

### Empowering IT

Through these data-driven capabilities, CIOs can raise the value of their offices and help support a wide range of institutional goals. Implementation of Blackboard Intelligence requires far less time and resources from IT departments than alternative platforms or an internal, homegrown solution. Setting up Blackboard Intelligence takes months rather than years, and the data infrastructure can be delivered either on campus or through managed hosting.

Colleges and universities gain the power of data-driven decision-making without overburdening the IT department...

With Blackboard Intelligence, IT reduces or eliminates the need to allocate their often limited technical resources to build out integrations, business logic, derived information, metrics, and reports. With this infrastructure in place, IT departments can serve their entire institution more effectively and efficiently. Colleges and universities gain the power of data-driven decision-making without overburdening the IT department, giving IT the ability to focus on other mission critical services and solutions for students, faculty, and staff.

## Accessing & Analyzing Data From the SIS

Many institutions already generate vast quantities of data through their student information systems (SIS). But this data is often difficult to access and use as the data is often just data – what is needed is real, actionable information. Student information systems are typically designed around data, transactions, workflows, and processes — not reporting and analysis.

Blackboard Intelligence extracts data from the SIS and transforms it into information that can be accessed, interpreted, and utilized by decision-makers across campus, organizing the information in a multi-dimensional data warehouse that provides much simpler access to analytical insights. With pre-built business logic, metrics, derived information, and reports sets, Blackboard Intelligence allows users across an institution to easily access and leverage the information to help drive more data-informed decisions.

To most effectively support the institution as a whole, both in decision-making and the wide range of tasks that fall to the CIO and their IT department, CIOs need data solutions that make information as available and easy to interact with as possible. Blackboard Intelligence helps information and technology officers better serve their institutions, leveraging high-value information to gain insight that leads to more accurate, more effective, and more strategic decision-making.

### About the Author

Matt brings 10 years of higher education experience having held leadership roles within student affairs, information & educational technology. Matt most recently served as Chief Technology Officer at Tulsa Community College. Matt holds an undergraduate degree in Marketing from the University of Oklahoma, Master's in Higher Education Leadership from Oklahoma State University and is nearing the completion of a PhD in Educational Technology from Oklahoma State University. At Blackboard, he works with institutions to leverage data to help drive student success and institutional effectiveness. His research interests include innovations in online learning models and learning analytics.

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## Conclusion

Blackboard Intelligence isn't a solution for one department or role within your organization. It's a comprehensive data infrastructure designed to support educators, learners and decision-makers alike.

For higher education institutions, the challenges of today and tomorrow are demanding and plentiful. But Blackboard Intelligence was designed to help meet these challenges head on. With a comprehensive platform, you can help your institution make more proactive, data-driven decisions; target, engage, and retain the right students; improve your fiscal fitness, and much more.

As schools compete in the new higher education marketplace, those with the ability to act on rich institutional data will take the lead. With more focused understanding of data and data-driven decision making, these institutions will become the educators of the future.