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# The Learning Analytics Blueprint

Moving your data strategy from concept to practice

# 1. DEFINE YOUR GOALS

Increase student retention  
*Waiting Area*

Increase graduation rates

Report for financial aid requirements

Identify at-risk students

Increase student satisfaction & engagement

Understand how tech is being used

Analyze data for measurement & research purposes

Prep students for further study or careers

Measure CBE & program initiatives

Analyze data for measurement and research

# 2. DETERMINE WHERE YOUR DATA IS

SIS / ERP / HRIS

Learning Tools (Caliper, LTI)

Mobile applications

Financial aid tracking systems

LMS: Activity Social Video Assessment Mobile Games

Publisher and external content

Transcriptions systems

Facilities or other campus resource systems

Wearables, sensors, other third-party data

# 3. DECIDE WHAT YOU NEED

**Student Retention & Completion**  
Predict student success before first test, graduate more students faster

**Learner outcomes & efficiency**  
Measure learner outcomes and content effectiveness in traditional & CBE programs

**Student engagement**  
Design great learning experiences and interventions for each student that scale

**Real-time insights & open data**  
Understand usage, see trends, analyze and extract data

# 4. PREPARE FOR SUCCESS

**Get Knowledge:**  
Find the right data, tools, and skills

**Drive Action:**  
Get leadership buy-in, put real-time data in the hands of learners, instructors, and advisors

**Measure Results:**  
Know your goal, what to measure, and create your continuous improvement plan.

Decide where you do this yourself and where you use experts

# 5. BUILD YOUR SOLUTION

D2L is the right partner for Learning Analytics:

Experts in learning data and how to use it

Complete suite of integrated learning analytics

Access to data scientists and change management experts in learning

Design smart interventions that scale

Real time + Open Data Standards (LTI, Caliper in and out)

Data-driven learning outcomes, streaming events, big data cloud



# Learning Analytics Blueprint

**What is Analytics?**  
Data is not analytics. Learning Analytics are about using data to create Knowledge that you can Act on to drive desired Results. For learning analytics to have an impact, the insights they provide must be closely tied to the ability to take action at scale.



**BUILD:** Brightspace Insights Suite™  
**BUILDER:** D2L, [www.brightspace.com](http://www.brightspace.com)  
**MATERIALS:** Brightspace Insights white glove services, Brightspace Insights analytics suite, Brightspace data access

# Welcome to the World of Data-Driven Opportunities

From visualizing a student's level of engagement within a course or program to pinpointing those students at risk and in need of quick intervention, learning analytics have the potential to make a huge impact on an educational institution's overall learning outcomes. In a recent study, 87% of college students reported that having access to data analytics regarding their academic performance would have a positive impact on their learning experience.<sup>1</sup> Predictive analytics can also help K-12 educators improve instruction, optimize resource allocation and predict the likelihood of college readiness.<sup>2</sup>

At the same time, educational institutions are facing new unprecedented pressures. Non-traditional students now make up a large percentage of the student population. There is increased competition from institutions for mindshare and funding. And budgets are flat—if not shrinking. Institutional leaders need to face off against these challenges by leveraging the data at hand to work smarter, think more innovatively, and to ultimately better advance student success.

Learning analytics can help boost an educational institution's accountability, affordability, productivity, and student success. But the million-dollar question for most institutions lies in the how? Not the why. While they know that the data they've gathered is a high-value asset, the ability to analyze and interpret meaning from those numbers is, for most educational institutions, still an unmet goal.

The importance and significance of senior leadership buy-in and support around these initiatives can not be overstated. That backing provides a solid foundation, not only for endorsing the goal that the organization wants to achieve but also in endorsing all of the downstream activities, enablement, and change required to enact a strategy to achieve the goal. The leader plays an extremely important role in evangelizing and supporting all of the activities that will take place around this initiative.

Furthermore, every institution is on its own unique path of discovery when it comes to business analytics, meaning a “one-size-fits-all” data management solution is not the answer. Every institution has its own plans and desires for how data will be consumed and stored. However, every institution also has an obligation to diligently manage data privacy and the ethical use of the data that is collected. Student learning data can provide great learning analytic insight but must also be used properly with appropriate considerations for student privacy and anonymity. A clear and concise data strategy should be created to govern the use of data within each institution.

Developed by D2L experts in learning, the **Learning Analytics Blueprint** is designed to help educational institutions move their analytics strategy from concept to practice, and use data to derive **Knowledge** they can **Act** on to drive desired **Results**. Backed by the industry's most comprehensive suite of integrated learning analytics this step-by-step guide answers the pressing questions institutions have about harnessing the power of analytics for improved insights and enhanced learning outcomes.

<sup>1</sup>[Are Learning Analytics the New 'Likes'? 87% of College Students Perform Better with Access to Personalized Data, New Research Finds. McGraw-Hill Education, McGraw-Hill Education, 28 Oct. 2015. Web.](#)

<sup>2</sup>[Rethinam, Vasuki. "Predictive Analytics in K-12: Advantages, Limitations & Implementation." The Journal. Public Sector Media Group, 06 Dec. 2014. Web.](#)

# 1. DEFINE YOUR GOALS

Increase student retention  
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Increase graduation rates

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Measure CBE & program initiatives

Identify at-risk students

Hanging smart TVs

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Analyze data for measurement and research

Understand how tech is being used

Analyze data for measurement & research purposes

Prep students for further study or careers

Entrance/Exit

Installation - Wall Clock Art

Sign-in/Info stations

Line queue

Water Cooler

Literature Stand

Literature Stand

Print and Copy Centre

Water Cooler



# Defining your goals

## Using data for better understanding

This isn't about 'analytics' or data. It is about insight and understanding to help you solve the most pressing challenges impacting your institution, your faculty, and your students. Learning analytics can provide you with a vital pulse check on what's happening across the learning enterprise, laying the groundwork for better understanding and improvement. So before you embark on your business analytics journey, the first step is to define your business goals and objectives. Are you looking to understand achievement levels of learning outcomes? Measure student engagement? Benchmark retention rates year over year? It's all possible with the right learning analytics strategy.

Remember as well, when mapping out your analytics goals and objectives, every institution is coming from a different starting point. Many educational institutions are still at the point where they are 'understanding how current technology is being used.' And please be assured, that's a fine place to be. If you are capturing data, identifying your overarching business goals and identifying the right questions to ask, you are on the right path, and you'll be far more productive in the long run than if you dive blindly into tools and analytics.

### **Regardless of your maturity level, the key is to get going.**

Let's take a look at some of the ways data and business analytics can help educational institutions improve their understanding and solve real business problems:

- To identify at-risk students
- To increase student retention
- To predict likelihood of college readiness
- To shorten time to graduation
- To improve student engagement and satisfaction
- To understand instructor effectiveness
- To determine course effectiveness and identify areas for curriculum improvement
- To better prepare students for further study or their chosen vocation
- To understand how current technology is being used
- To analyze data for benchmarking and research
- To report on financial aid requirements
- To measure effectiveness of learning strategies, such as competency-based education (CBE) (i.e., outcome achievement, time to completion, ROI, student progress dashboards, etc.)

## 2. DETERMINE WHERE YOUR DATA IS



# Determining Where your Data is

## Uniting many sources of data for better understanding of learning interactions

From the information gathered within the learning management system (LMS), to admissions data, to student's social interactions and engagement with content assets, rich sources of data can be found everywhere on campus. The real power of learning analytics comes when these pockets of data are brought together to form a united picture of understanding.

In the past, data was collected and displayed in a variety of formats creating impenetrable silos of information within the learning enterprise. However, new standards are emerging to guide educational institutions in consistently capturing and presenting measures of learning activity. Educational institutions now have the ability to create a holistic, 360-degree view of what is happening in the teaching and learning environment. With this understanding, they can then make improvements in the learning experience.

### **Using a holistic view of data educators can:**<sup>3</sup>

- Answer those seeking more accountability with measures of learning activity in addition to learning outcomes
- See which behaviors and content consistently produce the desired learning outcomes
- Compare the effectiveness of different content or interaction types
- Arm early warning systems and establish predictive measures
- Personalize curriculum in real time based on student patterns

<sup>3</sup>"Caliper Analytics." Caliper Analytics. IMS Global Learning Consortium Inc. n.d. Web

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**Does your institution have a data strategy that incorporates these kinds of data sources?**

**1. The LMS**

- Activities
- Completion
- Social and informal learning
- Discussions
- Formative and summative assessment
- Group work
- Mobile
- Video

**2. Enterprise-level systems**

- Student Information System (SIS)
- Enterprise Resource Planning (ERP)
- Human Resource Information System (HRIS)

**3. Mobile applications**

**4. External vendors (i.e., Data from Learning Tools Interoperability (LTI) tools)**

**5. Financial aid tracking systems**

**6. Transcriptions systems**

**7. Facilities or other campus resource systems**

**8. Wearables, sensors, or other third-party data**

### 3. DECIDE WHAT YOU NEED

#### Student Retention & Completion

Predict student success before first test, graduate more students faster

#### Learner outcomes & efficiency

Measure learner outcomes and content effectiveness in traditional & CBE programs

LUNCHROOM

#### Student engagement

Design great learning experiences and interventions for each student that scale

#### Real-time insights & open data

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# Deciding what you need

## Aligning data insights to your biggest learning challenges

Now that you have your goals defined and you have located where the pots of data gold exist within your learning enterprise, it is time to put that data to work for you. But it is critical you think strategically when approaching business analytics so your organization doesn't find itself lost in analysis paralysis.

First, take inventory of the critical questions you have and the answers you seek to derive from your data. Then make sure they are aligned with the overarching business goals of your educational institution. This approach will allow you to strategically construct and segment your data into the categories that matter most to stakeholders.

# Here are just a few categories of analytics that we see our educators rallying around

## **Student progression to graduation, retention and time to completion**

Keeping students on track and progressing toward graduation isn't always straightforward. Lack of preparation at the onset of a student's educational career is indicative of a larger trend: non-matriculation. Today four out of 10 new college students take remedial courses due to their inadequate preparation for the academic demands of higher education.<sup>4</sup>

And, despite all of the economic and social benefits of completing post-secondary education, only 56% of students entering university successfully achieve their bachelor's degree within six years. Similarly, only 29% of students who start a two-year degree program finish within in three years.<sup>5</sup> Learning analytics can impact overall retention rates by helping instructors predict student likelihood of college preparedness, and success rates once they arrive in the post-secondary world. The knowledge gained from learning analytics can also shape a more personalized learning experience for students, which ultimately translates into more successful outcomes at both K-12 and post-secondary levels.

## **Adaptive and self-directed learning**

Struggling K-12 students, present arguably the most significant challenge to US schools today, and personalized learning using adaptive technology is well suited to helping teachers design customized learning paths for struggling students. At the post-secondary level, with more and more non-traditional (mature) students returning to realize their educational goals, educational institutions must adapt learning delivery models to cater to the needs of this new type of student. Some are embracing concepts such as competency-based learning, where past learning is acknowledged and students can accelerate through subject matter if they can demonstrate mastery. Other institutions are embracing adaptive learning, using data to reveal how a student is doing, how they will perform, and how best to optimize learning to maximize outcomes.

<sup>4</sup>"Why College and Career Readiness Is an Integral Component of K-12 Education." Web log post. Insights. Hanover Research, n.d. Web.

<sup>5</sup>Shapiro, D., Dundar, A., Yuan, X., Harrell, A., & Wakhungu, P.K. Completing College: A National View of Student Attainment Rates-Fall 2008 Cohort (Signature Report No. 8). Rep. National Student Clearinghouse Research Center, 17 Nov. 2014. Web.

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### **Student engagement**

When a student is more engaged, they are more willing and eager to learn. Over the last few decades, educators have started to emphasize student engagement as a necessary condition for student success and achievement. Many educational institutions at the K-12 and post-secondary levels now cite student engagement as both a policy goal and an institutional priority. Learning analytics can reveal how engaged students are in the material, their pace of learning, and the effectiveness of course content.

### **Student outcomes and efficiency**

At the end of the day, it is about efficiently and effectively achieving the best learning outcome for students. Analytics provide educational institutions with direct insight into the root causes of student success and failure with course matter, the rate of engagement with course materials. Predictive analytics also help instructors reach students at risk with appropriate interventions, and proactively provide personalized attention to a large number of students.

### **Data access and reporting**

Many educational institutions operate with tight budgets and resource constraints. And yet all are required to report on, and account for their business performance, contribution to communities served, and on the learning outcomes achieved by their students. In the past, the data gathering process was an administrative nightmare. Data sets were often locked away in silos and key metrics tracked inconsistently. And there was no holistic view allowing institutions to see the whole picture or benchmark their performance against others in the industry. Learning analytics offer administrators a way to easily extract and harmonize data scattered across the learning enterprise, so they can effectively measure performance, understand usage, and observe and track trends.

# 4. PREPARE FOR SUCCESS

## RECEPTION

## SERVER ROOM

## OFFICE SPACE



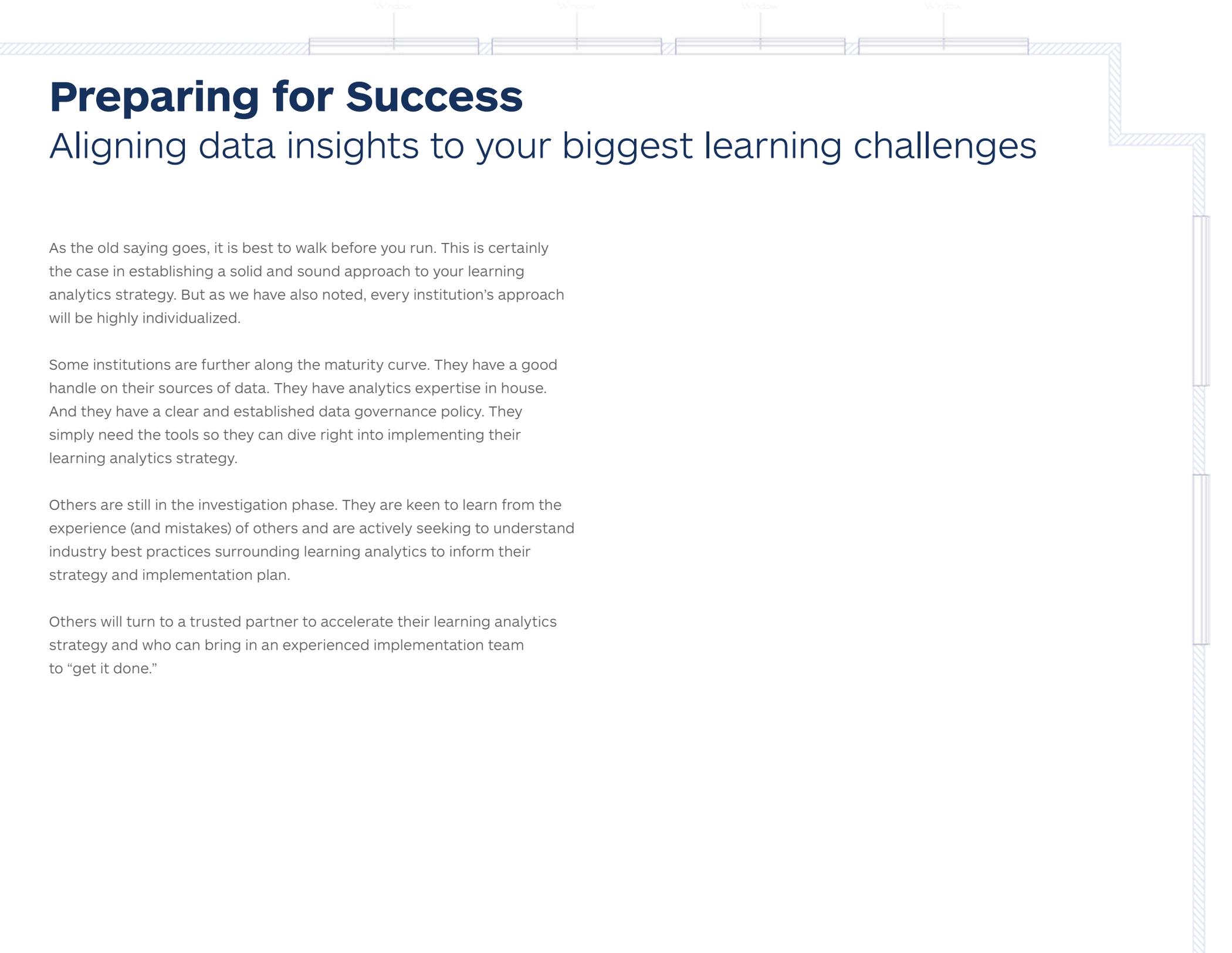
**Get Knowledge:**  
Find the right data, tools, and skills

**Drive Action:**  
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**Measure Results:**  
Know your goal, what to measure, and create your continuous improvement plan.

Decide where you do this yourself and where you use experts





# Preparing for Success

## Aligning data insights to your biggest learning challenges

As the old saying goes, it is best to walk before you run. This is certainly the case in establishing a solid and sound approach to your learning analytics strategy. But as we have also noted, every institution's approach will be highly individualized.

Some institutions are further along the maturity curve. They have a good handle on their sources of data. They have analytics expertise in house. And they have a clear and established data governance policy. They simply need the tools so they can dive right into implementing their learning analytics strategy.

Others are still in the investigation phase. They are keen to learn from the experience (and mistakes) of others and are actively seeking to understand industry best practices surrounding learning analytics to inform their strategy and implementation plan.

Others will turn to a trusted partner to accelerate their learning analytics strategy and who can bring in an experienced implementation team to "get it done."

# Here are three important considerations when building your learning analytics plan

## Get Knowledge

- How will you staff your initiatives?
- Do you have the programmers, data scientists, instructional designers, and project managers in place to execute on your learning analytics strategy?
- Do you have people who know the data (what it represents) and know the processes by which the data is collected?
- Do these individuals have the right skills and expertise, for instance, to leverage predictive algorithms and big data technologies?
- Do you have the right Business Intelligence (BI) tools in place?
- Do you have support resources and staff available for faculty who are looking to improve their courses?
- Where are you on the learning analytics maturity curve? How far along are you in the planning process? Are you still learning, building your plan, or are you ready to go?
- Have you thought through your associated data governance policy? How will the data be used, for what purposes and who will be able to view and use it?
- Are you confident in your ability to execute against your plan?
- Do you have sufficient support resources and staff available to mentor faculty looking to use analytics to improve their courses and student interactions?

## Drive Action

- Do you have someone in leadership ready to champion your plan?
- Do you have access to data—a lot of data—but are unsure of how to interpret it and apply that knowledge to make better business decisions?
- Are administration and faculty ready to embrace and incorporate learning analytics? Are they open to the changes this will demand of them?

## Measure Results

- How will you work towards continuous improvement?
- How will you leverage the knowledge gained from analysis to ask new questions, refine, and test new hypotheses?
- How can partners be engaged to help in refining and implementing your ongoing plan of action?
- How will you know you're successful?

## 5. BUILD YOUR SOLUTION

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Complete suite of integrated learning analytics

Access to data scientists and change management experts in learning

Automatic Re-order Terminal

Design smart interventions that scale

Today's Automatic Re-orders

Real time + Open Data Standards (LTI, Caliper in and out)

New orders

Data-driven learning outcomes, streaming events, big data cloud

Automatic Re-order Robotic Arm

SHIPPING

# Building your Solution

## How a learning analytics expert can set you up for success

Learning analytics can boost an educational institution's accountability, affordability, productivity and student success. But there are best practices to learn. There are skills to hone, and standards to follow. Not every educational institution is in a position where it is ready to go it alone.

### Here are some questions to ask your learning analytics partner:

1. Does your team have a deep understanding of learning data and how to use it?
2. Is your technology platform open, standards-based, and built for Internet scale?
3. Do you offer a complete suite of integrated products?
4. Can you demonstrate experience in making other customers successful in their learning analytics strategy?
5. Are you committed to continually improving and innovating to remain in lockstep with shifting market trends and dynamics?

### Why Partner with D2L?

D2L brings to the table extensive experience in learning analytics and data management best practice, enabled by a powerful technology platform. Our expertise, platform and ability to deliver data where it counts are an instrumental factor in making our customers around the globe successful.

D2L's ability to provide powerful analytics to create a more meaningful learning experience is globally recognized, with the #6 ranking on **Fast Company's list of The Most Innovative Companies** of 2016 in the Data Science sector.<sup>6</sup>

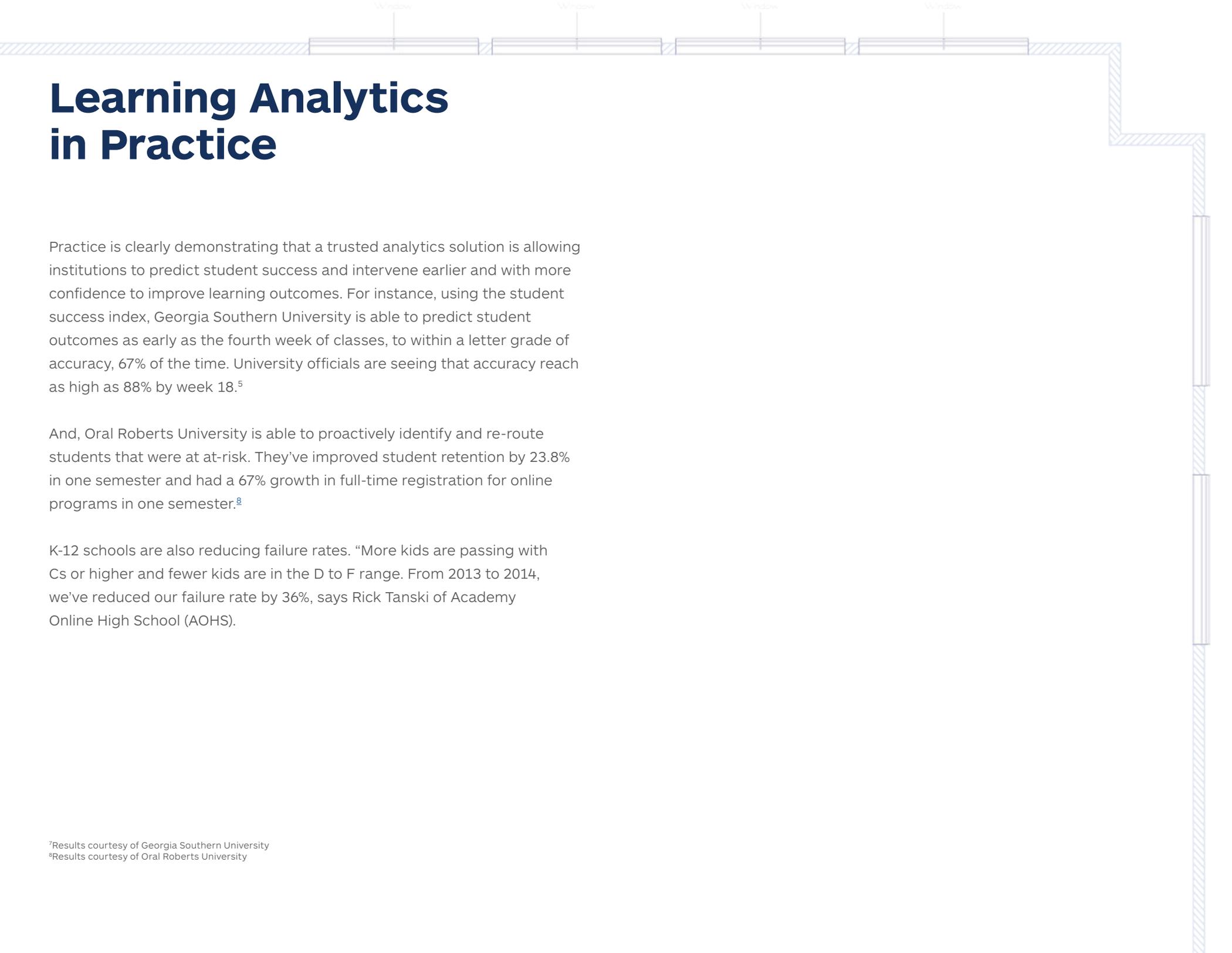
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"D2L was given a perfect score for student performance and retention because it has moved beyond basic reporting and alerts, and no other Online Learning Platform (OLP) vendor has grasped predictive analytics in the way D2L has."

– Ovum, 2015

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<sup>6</sup>"The World's Most Innovative Companies by Sector: Data Science." Fast Company. Fast Company & Inc. © 2016 Mansueto Ventures, LLC. Feb. 2016. Web.



# Learning Analytics in Practice

Practice is clearly demonstrating that a trusted analytics solution is allowing institutions to predict student success and intervene earlier and with more confidence to improve learning outcomes. For instance, using the student success index, Georgia Southern University is able to predict student outcomes as early as the fourth week of classes, to within a letter grade of accuracy, 67% of the time. University officials are seeing that accuracy reach as high as 88% by week 18.<sup>5</sup>

And, Oral Roberts University is able to proactively identify and re-route students that were at at-risk. They've improved student retention by 23.8% in one semester and had a 67% growth in full-time registration for online programs in one semester.<sup>8</sup>

K-12 schools are also reducing failure rates. "More kids are passing with Cs or higher and fewer kids are in the D to F range. From 2013 to 2014, we've reduced our failure rate by 36%, says Rick Tanski of Academy Online High School (AOHS).

<sup>5</sup>Results courtesy of Georgia Southern University

<sup>8</sup>Results courtesy of Oral Roberts University

## **ABOUT D2L**

D2L is the software leader that makes the learning experience better. The company's cloud-based platform—Brightspace—is not a common one-size-fits-all learning management system (LMS). It's easier to use, more flexible, and smart. With Brightspace, you can personalize the experience for every learner to deliver real results. The company is also a world leader in learning analytics: its platform predicts learner performance so that you can take action in real time to keep them on track. Brightspace is used by learners in higher education, K-12, and the enterprise sector, including the Fortune 1000. D2L has operations in the United States, Canada, Europe, Australia, Brazil, and Singapore. | [www.brightspace.com](http://www.brightspace.com)

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