

Perspectives

Community College
Leadership for the
21st Century

MAY 2018

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[H]igher education is at a transition point, pivoting from harvesting data to learning how to use it strategically in developing interventions—and getting those findings to faculty and students so they can have an impact.

- American Council on Education

Optimizing student success is the 'killer app' for analytics in higher education. Intelligent investments in optimizing student success garner wide support and have a strong, justifiable return on investment.

- Donald Norris and Linda Baer

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Advising and Predictive Analytics: The HT² of Student Success (High-Tech; High-Touch)

Marcia Ballinger, PhD

President

Lorain County Community College
Elyria, Ohio

LaPreece Thomas is a 2018 Lorain County Community College graduate. After 25 years of corporate office work, the proud mother of five and grandmother to two decided to chase a dream – one that sparked unexpectedly when she took her daughter to summer camp at NASA. She went back to school to earn a degree in mechanical engineering.

She knew school wouldn't be easy for her. At 47 years old, coursework, studying and tests had become a distant memory. She was still working full-time in the corporate world and would have to juggle credit hours and internships. And as those of us with grown children know, you never stop being a full-time mother. But the advisors and professors at Lorain County Community College were well-equipped and ready to welcome LaPreece to her campus. She participated in a program called SAIL (Students Accelerating In Learning). It's based on the City University of New York's Accelerated Studies in Associate Programs (ASAP) successful model, where over 50 percent of new students graduate with an associate degree in three years.

I believe that's how community colleges should function - fostering success for everyone. Every student's dream matters and it's our responsibility to meet them where they are.

The SAIL program is focused on one thing – getting students to the finish line with a degree that has labor market value. It's a multifaceted, integrated, and long-lasting program that provides an array of intensive and intrusive wraparound services and support, like gap tuition scholarships, free textbooks, grocery and gas gift cards, along with mandatory advising and tutoring.

Though every aspect of college life was foreign to her and life struggles met her at every turn, as a member of SAIL, LaPreece said she "never felt lost" and that all she had to worry about as she worked toward her dream, was "making my grades."

I believe that's how community colleges should function – fostering success for everyone. Every student's dream matters and it's our responsibility to meet them where they are. And that means we have to apply high-tech innovations to support our high-touch environment.

Adopting a Culture of Student Success. Lorain County Community College's number one priority in our Vision 2020 is to "Drive Student Completion for Academic and Career Success." Our Student Success Agenda is in direct alignment with this priority and our completion efforts are

evidence-based, data-informed and student-centric.

Like all those focused on student completion, we embarked on a deep redesign of our majors, based on the loss-momentum framework, to reshape our students' experiences and align our courses and services to guided pathways toward careers. Under the guided pathways approach to student success, our program pathways – or meta majors – let students explore career options or get on track to the career they already have in mind. The biggest change we made in striving toward completion was coupling the pathway approach with specialized advisors. Now, instead of meeting with multiple advisors throughout his or her journey, students develop a relationship with an academic advisor who specializes in his or her degree pathway.

These are our most significant initiatives in decades – and they're working. Our students are taking fewer credits-to-completion and our Community College Survey of Student Engagement scores, which assess institutional practices and student behaviors that are correlated highly with student learning and student retention, indicate greater engagement in advising and support services.

Earlier this year, we were recognized for the second consecutive year as first among all Ohio community colleges in student success, which is defined as completion, transfer, and persistence. According to a recent report on these three-year success measures from the Ohio Department of Higher Education, the state average success rate is 51 percent, while ours sits at 60 percent. We've tripled our 150 percent IPEDS graduation rate and increased the number of degrees and certificates awarded by 53 percent since 2011. We also lead the state in bachelor's degree completion for students who transfer to other schools. And just recently, receiving the 2018 American Association of Community College's Excellence in Student Success Award further validated our efforts.

I am honored that our work and outcomes can serve as a model and inspiration for other colleges, as Davis Jenkins, senior research scholar at the Community College Research Center has said. Community colleges have always been institutions that gather, support, and share and that's one of the reasons I was so eager to partner with Civitas.

Harnessing the power of prediction. With guided pathways and career-aligned advising in place, harnessing the power of predictive analytics was a next logical step. We developed with Civitas ways to incorporate predictive analytics into our strategic priorities, with an emphasis on the key performance indicators that drove our pathway and advising redesigns.

We knew the risks that students who took less than 15 credit hours faced – and encouraged them to increase their credit load, while guiding them toward the resources that would help them manage it. We studied the course-taking patterns of successful students across many pathways – and now trigger alerts when students on an accounting pathway

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EMERGING LEADERS' PERSPECTIVES

As community colleges enroll students with diverse academic backgrounds, challenging completion and accountability pressures must be addressed while remaining committed to the goal of student success. Today, many college leaders are focusing on using predictive analytics – tools for making data-driven decisions that can contribute positively to student success – to develop policies and interventions to help avoid potential obstacles to student success and institutional effectiveness. We posed the following question to emerging and national leaders. Their answers appear below.

Monica Koziol, MA

Associate

Hazard, Young, Attea and Associates
Schaumburg, Illinois

Predictive analytics have been used by institutions of higher education, including community colleges, for a substantial period of time as a means of gauging student success and institutional effectiveness. For example, with regard to college admissions and recruiting, student grades have been found to be better predictors of student success than aptitude tests such as the ACTs and SATs (Umbach, 2005). The Promise Scholarship at William Rainey Harper College (2018) illustrates this with a motto of “two years of college...tuition earned” – the first criteria being maintaining solid grades. What has been revolutionized in recent years is the implementation of technological innovation – known as big data and predictive analytics – which has transformed time-space social interactions on community college campuses (i.e. emailing, texting, instant messaging), and in turn, is impacting student success and institutional effectiveness.

The greatest obstacle that community colleges foreseeably will face is building an analytical ecosystem that manages how data is collected, stored, disseminated, and used (Davenport & Harris, 2010). Management Information Systems (MIS) may prove to be even more beneficial for community colleges as departments collaborate from institutional technology (IT) to Statistical Analysis Software (SAS) [Davenport, Harris, & Morrison, 2010]. The California Community College system is an example with an extensive online database of MIS and data analytics. However, even though data and analytics tools are in abundance, most educational institutions have failed to educate stakeholders, including leadership, on predictive data-driven decision-making, largely founded on the core principles of accuracy, timeliness, relevance, integration, and security (Gagliardi, Parnell, Carpenter-Hubin, & Swing, 2017).

Assemblywoman Jacqui Irwin created the Community College Placement Bill, which identifies a concern about remedial courses and how both the stigma and timetable contribute to the high dropout rates among those enrolled in remedial programs (Zinshteyn, 2017). Course grades are often used to make decisions about student placement – remedial, standard, or honors. Those student placement decisions have a significant impact on student performance, persistence, and fulfillment (Noble & Sawyer, 1987). Generally, performance levels differ among the remedial, transfer-in, and honors students. Institutional implementation of predictive analytics may help better track and reduce unnecessary remedial enrollment.

Self-made predictions of academic performance and self-concepts of academic aptitude using the Brookover scale and ASCS (Academic Self-Concept Scale) were found to have reasonable efficiency in predicting grades in college (Baird, 1976). Modern day predictive analytic tools may help key educational decision makers implement more effective policies and interventions around student success. However, educational stakeholders have raised concerns about predictive data's impact on privacy and the students' community college experience. Thus, further research should be done on the ethical uses of predictive analytics tools.

QUESTION OF THE MONTH:

As community colleges begin to adopt predictive analytics to accelerate student success innovation, what institutional issues must be addressed?

Marie Yowitz, MSW

Accessibility Coordinator, Educational Counselor,
and Associate Professor
Ferris State University

For post-secondary institutions there is a renewed sense of urgency to improve accountability, transparency, and performance in higher education—the result of a perfect storm of state budget challenges, the ongoing transition from a manufacturing to a

knowledge economy, and the inability to appropriately articulate the value of a postsecondary education (Stephenson, Yerger, & Heckert, 2017). As the calls for academic accountability become increasingly strident, analytics techniques are being applied to a myriad of variables, including student success, student access and diversity, meeting workforce needs, and research and innovation to benefit the academic community and society (Baer, 2017).

There has been significant growth in data mining software, and learning management systems are developing that provide analytics to report and monitor learning. However, several matters must be considered regarding the use of predictive analytics. For example, analytics cannot be used significantly for new initiatives, due to its nature of analyzing the historical data (Krumm, Beattie, Takahashi, Dangelo, Feng, & Cheng, 2016; Newcomer & Brass, 2015). Analytic programming could be expensive and cost-prohibitive as the analytics require a deep learning curve, skill, and technological knowledge. In addition, there may be a concern over data security, data outsourcing, and crashing servers. (Patton, 2015).

As community colleges begin to adopt predictive analytics to accelerate innovation in student success, institutions must:

- ▲ Evaluate strategic priorities and coordination of resources.
- ▲ Assess what metrics, data, and indicators are being used for accountability and accreditation (Attaran, Stark, & Stotler, 2018).
- ▲ Identify data definitions and standards moving to actionable outcomes.
- ▲ Leverage the power of data through deeper insights and action (Milliron, Malcolm, & Kil, 2014).
- ▲ Inventory stakeholder data needs and align with the integrated planning process, including state and federal mandates and accreditation dictates.
- ▲ Focus on improving student learning and institutional performance.
- ▲ Pay attention to the tools, applications, and services that are available to support analytics and data-driven decision making (Jayaprakash, Moody, Lauria, Regan, & Baron, 2014).
- ▲ Create a culture of measurement, performance, and action (Boerner, 2015; Dobson, 2012).
- ▲ Assess student success outcomes encouraging the use of research.

Clearly, a strategic and comprehensive approach to evaluation could advance learning within the post-secondary institution. Campuses need to have the right infrastructure to get the right data to the right people in the right way. If faculty, advisors, and students have access to learning data, they can make more informed decisions and positively affect outcomes.

Monica Koziol, MA, is an Associate with Hazard, Young, Attea and Associates, a preeminent education consulting firm with over 30 years of executive search and education consulting experience. Monica's professional foci include alumni engagement, curriculum design, and professional development. She earned her MA in Sociology from DePaul University and an MA in Educational Leadership and Organizations from Roosevelt University. Currently, she is pursuing her doctorate in the Ferris State University DCCL Program.



Marie Yowitz, MSW, serves as Accessibility Coordinator, Educational Counselor, and Associate Professor at Ferris State University. She earned a Master in Social Work degree from Grand Valley State University and recently completed the Assistive Technologist program through California State University, Northridge. Currently, she is enrolled in the DCCL program at Ferris State University. Marie is passionate about advocating for equity in accessibility and working to ensure institutional compliance within legal guidelines.



NATIONAL LEADER PERSPECTIVE

As community colleges enroll students with diverse academic backgrounds, challenging completion and accountability pressures must be addressed while remaining committed to the goal of student success. Today, many college leaders are focusing on using predictive analytics – tools for making data-driven decisions that can contribute positively to student success – to develop policies and interventions to help avoid potential obstacles to student success and institutional effectiveness. We posed the following question to emerging and national leaders. Their answers appear below.

Dancing with Data

Mark David Milliron, PhD

Co-Founder & Chief Learning Officer
Civitas Learning

Most leaders in community colleges came of age in a day when dancing with data had different steps. Their dance with data was important, make no mistake. Getting solid data for boards, state regulators, federal agencies, and accreditors was at best, required and at worst, existentially threatening. Institutional Research (IR) departments took their work seriously; so much so, they were typically overwhelmed with requirements and particularly protective of their products and processes. Progressive data-centric colleges collected Key Performance Indicators (KPIs) and followed emerging Continuous Quality Improvement (CQI) traditions. For example, the Continuous Quality Improvement Network (CQIN), an early and effective data-dancing organization, had colleges that won the Baldrige Award (e.g., Richland College), were featured in key publications (e.g., Community College of Denver in 'Embracing the Tiger'), and who were shining examples of the courage to learn and guide organizational change with data.

This data dance is no less important today. Indeed, reporting requirements are not only still there, they are expanding. However, as leaders across the community college world are seeing, the embrace of digital tools for student information systems (SIS), learning management systems (LMS), customer relationship management systems (CRM, recruitment and advising tools), digital curricula, and student apps brings a flood of new and deeper data that holds far more potential than producing accurate and useful insight for strategic planning and program monitoring. Bringing together modern data science – e.g., predictive modeling, machine learning, and sentiment analysis – and design thinking means we can use data not only to tell us stories about students today and past, but also about the likely trajectories our students may head toward on their learning and completion paths, and illuminate opportunities to improve those trajectories.

Bringing together modern data science – e.g., predictive modeling, machine learning, and sentiment analysis – and design thinking means that we can bring data to life

Let's think of this new dance as a Data Waltz. As you might know, a traditional waltz is a dance that consists of three key steps that cycle into an array of different forms. Dance innovators have taken the basic waltz and created untold innovations, including the Viennese Waltz, Slow Waltz, Scandinavian Waltz, and the Contemporary Western Waltz. To keep with the metaphor, in any good Data Waltz there are three basic steps that allow leaders to bring new energy, insight, and innovations to their work. Here we go:

Step One: Move away from a primary focus on reporting. While your traditional IR work is vital, it should not be the sole data driver. Indeed, to make the most of your data, you need to take a bold step away from a primary focus on reporting and into the world of real-time and predictive data, which involves broader teams. This means building out your infrastructure to turn your own data lights on (instead of relying on best practice data from other places) and starting to share the data with larger groups who are more focused on guiding operations, rather than precise reporting. This is a bold move that includes honoring your past as you move to your future. Moreover, it's a courageous step, because sometimes sharing the data broadly,

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especially data that aren't flattering, means working hard to keep a culture of wonder at the core, as opposed to an easy and often damaging culture of blame – e.g., "who's fault is that!"

Step Two: Focus these new data tools, and quickly. Sometimes the bold first step stalls the dance as teams look in wonder at their new data and get trapped in analysis paralysis. You must push to thoughtfully--but assuredly--make the second step.

Second-step work means using your real-time and predictive data about your current students to reach out, make contact, and act – typically focused on improving persistence and completion outcomes. However, future innovations in this dance will hopefully include more inclusive, interesting, and expansive targets like optimizing the student learning experience, linking to career outcomes, and long-term personal welfare/agency. This second step can include more complicated movements, like adopting an app for faculty, advisors, or students, or redesigning pathways; or simple steps like assembling care teams to guide triage and outreach or launching nudge campaigns to reach out to students at the right time with the right message to keep them on the right track. However this second step has to be taken with care, as the misuse or unethical use of these data can be problematic (see New America's excellent report on these issues).

Using impact studies on outcomes – particularly unpacking equity gaps in student outcomes – is a must.

Step Three: Bring it together with learning. While steps one and two are the boldest and most obvious, it's step three that is the most neglected. And as any good waltz pro will tell you, the third step sets you up for keeping the cycle going and really innovating. Indeed, taking the time to test what is working in your student success data dance using solid analysis matters. Using impact studies on outcomes – particularly unpacking equity gaps in student outcomes – is a must. So too is challenging yourself to hold this learning to the highest standard. Good leaders never neglect the third step in this dance. Indeed, it's their way of charting the course for the continuing flow of their work.

Skilled dancing takes courage and practice. We'll need them both as we continue to adopt this new data dance in the community college world. Moreover, we'll need leaders ready, willing, and able to cue the music and get on the floor!

Dr. Mark David Milliron is Co-Founder and Chief Learning Officer of Civitas Learning, an organization committed to helping education bring together the best of emerging technology, data science, and design thinking to help students learn well and finish strong on education pathways. An award-winning leader, author, speaker, and consultant, he has worked with universities, community colleges, K-12 schools, foundations, corporations, associations, and government agencies across the country and around the world. In previous roles, Mark served as the Deputy Director for Postsecondary Improvement with the Bill & Melinda Gates Foundation; founding Chancellor of WGU Texas; Endowed Fellow and Director of the National Institute of Staff and Organizational Development at The University of Texas at Austin; Vice President for Education and Medical Practice with SAS; and President and CEO of the League for Innovation in the Community College. He earned his PhD at the University of Texas at Austin.



QUICK TAKES
Highlights
from the Field

Predictive Analysis of Student Data: A Focus on Engagement and Behavior

by NASPA

In response to heightened public scrutiny over the value of higher education, colleges are considering how to use data to intervene proactively with students who are at risk for poor academic performance or low institutional engagement. Many institutions are now applying the use of predictive analytics directly to student success initiatives. This report presents findings from a NASPA landscape analysis of the use of predictive analytics by student affairs professionals at higher education institutions.

<https://bit.ly/2rVZi6E>

Predictive Analytics in Higher Education: Five Guiding Practices for Ethical Use

by Manuela Ekowo and Iris Palmer

The authors provide a framework to present important questions for college administrators when formulating how to use predictive analytics ethically. Since using data ethically is complex, no magic formula exists, but occasionally colleges will have to reassess whether their ethical standards address current data practices. This ethical framework is intended to start conversations on campus, although it cannot address all possible issues surrounding the use—and potential abuse—of institutional data.

<https://bit.ly/2meniVJ>



Published by the Alliance for Community College Excellence in Practice, Ferris State University, Doctorate in Community College Leadership Big Rapids, Michigan

EDITORIAL STAFF

Jeanne Bonner, PhD, Editor
Mara Jevera Fulmer, EdD, MFA, Design & Production Editor

To send comments or receive a copy of this publication, please contact us at: ccallian@fsu.edu

Advising and Predictive Analytics (continued from page 1)

are taking Anatomy and Physiology, a course required for science majors, to meet their science electives requirement. (We found that it's likely the student selected from the large field of choices alphabetically rather than choosing electives that aligns with their field of study.) We discovered courses most predictive of a student's likelihood to graduate, and that a difference of one letter grade could improve graduation rates as much as 20 percent.

Having real-time data on our students is powerful. But the greatest power lies in those who access it and take action. Advisors have proven to be the most influential resources in guiding student success. CUNY students said it was the intensive advising that made all the difference and allowed LCCC's results to match CUNY's 50 percent completion rate in three years. The textbook vouchers and gas cards are helpful – as LaPreece said, they help students worry less about their financial challenges and instead focus on their studies. But knowing someone is there for them, at every step of the way, advising them through courses, career pathways and in some cases life, has had the greatest impact on their success. Due to this model's success in getting students to the finish line, we plan to scale SAIL for even greater impact.

Advisors are our first line to students. And with tools like Inspire Advisor, they can uncover the reasons behind the academic struggles or engagement lags and then work with the student to break down the barriers. Sometimes those challenges are purely academic. But more often academic challenges stem from a personal life event or situation. On our campus, the number one stress is financial. That's what our Emergency Aid Team was created to address. This team implements priorities, strategies, and interventions that provide emergency aid to students in financial distress. We want to mitigate the life circumstances that are barriers to students attending and completing their courses and pathways.

Closing equity gaps. The common theme within all our initiatives and the use of predictive analytics is barriers – how can we first identify them and then eliminate them. This kind of work is core to any community college because our students do face more barriers than those at four-year universities. Like many colleges with student success agendas, we take our access, persistence, and completion data and layer it with our student profile data to see what groups of students are consistently facing the barriers that impact their success. We found significant and persistent gaps among our lower income students, our non-traditional students, and our students of color. Gaps were in completion, access to high quality learning experiences, and in disparities in areas of study that lead to strong labor market outcomes.

Our first step in eliminating equity gaps was to adapt the loss/momentum framework created by Completion by Design to incorporate equity. We call it Equity by Design. And our new Equity Scorecard is used to broadly share key metrics of student success – both lead and lag – with the backdrop of the student body and its relationship to that of Lorain County. The scorecard covers nine measures, including programs of study, completion of developmental education, persistence, credit accumulation milestones, and completion and transfer out. All this is led by our Equity for Students Team, which oversees and monitors any priority or strategy that's intended to close the achievement gaps for students of color and underserved populations.

Making every student's dream matter. We will always be evidenced-based in our approaches and understand the benefit of aggregate data. And predictive analytics has made us more proactive in our efforts to meet our students'

needs and guide them toward completion. But we also understand the benefit of disaggregating the academic data, as well as layering on top of it the socio-economic data we have gathered over 50 years of serving Lorain County. Armed and open with this data, we can infuse equitable outcomes into all our programs. That's when every student's dream truly matters – when everyone, despite barriers, has the opportunity to turn it into a reality.

I know it was this commitment to equity and a campus-wide culture where our students' success is everyone's business that led to Lorain County Community College being named the top community college in the country for Excellence in Student Success by the AACCC.

So what is LaPreece doing today? Well, she earned her associate of arts degree in 2018, as well as an associate of applied science degree, one-year technical certificate, and short-term technical certificate in manufacturing engineering technology – industrial mechanical technician from Lorain County Community College. The dream that ignited when she brought her daughter to NASA has come full circle. She accepted a full-time engineering job at Mainthia Technologies, a NASA contractor, starting in June.

The common theme within all our initiatives and the use of predictive analytics is barriers – how can we first identify them and then eliminate them.

But her educational journey didn't end. She plans to complete her bachelor's degree in mechanical engineering through our University Partnership program, where 14 colleges and universities deliver over 50 bachelor's and master's degrees. And just recently, LCCC was authorized by the State of Ohio as the state's first community college to develop and deliver an Applied Bachelor's Degree in Microelectronic Manufacturing. So who knows, with Ohio joining 20 other states in the nation allowing community colleges to confer applied bachelor's degrees in specific industry-demand areas, future students like LaPreece can earn a bachelor's directly from LCCC.

When you talk to her about her educational journey, LaPreece is quick to thank her academic advisor, Cynthia Arredondo. Cynthia was committed to LaPreece's success and had the tools and resources she needed to help LaPreece achieve it. Advising matters – it's a difference maker in our students' lives. And predictive analytics is one of the most powerful tools now in their arsenal.

Marcia Ballinger, PhD, has more than 25 years in community college leadership roles that have advanced student success, workforce and economic development, strategic planning, and institutional advancement. Dr. Ballinger was named as the 5th President of Lorain County Community College in 2016. She was awarded the prestigious Aspen Presidential Fellowship for Community College Excellence and is a recent graduate of this inaugural class of Aspen Presidential Fellows. She serves as co-campus lead for the Completion by Design project funded by the Bill & Melinda Gates Foundation, which has recognized LCCC as a National Innovator in Increasing College Completion. Additionally, she provides leadership for LCCC's Achieving the Dream initiative. She holds a PhD from Walden University and is also a proud alumnus of LCCC's University Partnership Program, having earned her MBA from Kent State University.

