

Measuring Supplemental Instruction Direct Impact on Persistence

University of Missouri-Kansas City (UMKC) serves more than 16,000 undergraduate and graduate students, from all 50 states and more than 85 countries.

Over the course of 7-8 years the university was seeing 1-2 percent bumps in retention and believed this meant that outcomes were increasing for all students, including underrepresented minorities who are central to the school's mission — but that was not the case, with African American student retention rates being 7 percent behind those of white students, and Hispanic student retention rates being 11 percent lower than white students for the 2017 first-time, full-time cohort. The gap is even wider for six-year graduation rates. UMKC knew that it needed to look at student success initiatives in a data-informed way in order to find opportunities to increase their efficacy for pockets of the student population, and to use technology and analytics to serve students better, by meeting them where they are.

UMKC outlined a plan to use predictive analytics to understand attrition patterns as part of their work with the Higher Learning Commission (HLC). But the school's data systems were not integrated — they were going back and forth between the SIS, LMS and legacy systems in student support services. Civitas enabled the university to implement a system of intelligence that brought data together to understand more about UMKC students, and the experiences they were each having. The first learning moment of this nature was the analysis of one of the most prominent programs on campus, Supplemental Instruction (SI).

Problem:

SI, created at UMKC, is a non-remedial approach to learning that supports students toward academic success by integrating “what to learn” with “how to learn.” SI consists of regularly scheduled, voluntary, out-of-class group study sessions driven by students' needs.

SI relies on academic departments to provide funding for the program but, with decreasing state funding and flattening resources, fewer deans were willing to make the investment. In order to discuss ongoing support for SI, UMKC needed to show whether it was helping students not only get through their courses, but persist and achieve long-term success.

Prior analysis of SI had focused on changes in students' GPA and course grades; however, in Issue 1 of [Community Insights](#), we reveal that grades are not predictive of student success. The UMKC institutional research (IR) team also looked at changes in student retention but needed a way to match students based on demographics and persistence predictions in order to draw true comparisons between students who participated, and those who didn't; and to determine if the impact on outcomes was due specifically to SI and not a combination of initiatives. The team needed results they could confidently share with academic units in order to have better conversations around how to offer and fund the program in a way that would maximize its impact on student success outcomes.

Efficacy
measurement
case study:

University of Missouri- Kansas City

Benefits:

7.8%pp
Overall Increase
in Persistence

\$1.6M
Return
on Investment

Most effective for:

- African Americans
- Zero terms completed
- Part-time
- Lowest persistence probability

Solution:

In just hours, Impact allowed UMKC to do sweeping analysis of SI that would have taken months to complete. The application implemented prediction-based propensity score matching (PPSM) to match 1,640 pairs of students who attended SI between Spring 2016 and Spring 2018. This matching controlled for differences across students in order to provide a rigorous apples-to-apples comparison without having to orchestrate a randomized control trial.

Results revealed a 7.8 percentage point (%pp) overall lift on persistence for students who attended SI three or more times each semester. The lift was even more significant for African Americans, students in their first semester, part-time students, and students with the lowest persistence probability.



7.8%pp
Overall
Increase
in Persistence



12.68%pp
Increase
in Zero Terms
Completed



10.82%pp
Increase
in African
American
Students



12.97%pp
Increase
in Part-Time
Students



24.25%pp
Increase in
Bottom Quartile
Prediction
Percentile

These improvements in student outcomes translate into \$590,000 in additional retained tuition per term — with a potential to achieve an ROI of an additional \$1 million by encouraging students who attended SI less than three times in the term, to stop by more frequently.

Action:

SI was originally conceptualized as a voluntary experience for students, but armed with Impact results, UMKC is proposing that for first-time students, SI should be an opt-out experience. The institution is designing nudge campaigns to reach the students shown to be most likely to benefit from this program, encouraging them to attend at least three times. For example, students with moderate persistence probability, often difficult to identify without institution-specific data, were easy to segment within the Civitas Learning Illume® application in order to send personalized nudges regarding SI.

To further reach students where they are, UMKC is leveraging Civitas Learning's ClearScholar® student mobile engagement application to deliver in-time, targeted messages about SI directly to students.

UMKC is also improving its approach to identifying courses where SI could help elevate student success. The university had been recommending SI for courses where 25 percent or more students had grades of D, F, or Ws, but use of the Civitas Learning Courses® solution indicated that offering SI in yellow flag courses — those where earning a C significantly decreases a student's likelihood to graduate — could greatly move the needle on outcomes. This insight is backing up the business case to have departments offer SI in yellow flag courses, and to pay the associated fee, having more confidence in what the return on that investment could look like.

About Civitas Learning®:

Today, Civitas Learning is a strategic partner to nearly 400 colleges and universities, serving more than 8 million students. Together with our growing community of partners, Civitas Learning is making the most of our world's learning data to graduate a million more students per year by 2025.

Learn more about our efficacy measurement solution at www.civitaslearning.com/solutions/efficacy-measurement



One of the hardest things institutions try to do is to stop engaging in some of the practices that have long been part of our culture and our history. The only way to do that is to have clarity around what is really working and what is not. Civitas is now a foundational part of how we have these conversations, with our students in mind.

— **Cindy Pemberton**
Deputy Provost