WILLIAM E. KIRWAN
CENTER *for* ACADEMIC INNOVATION

Call for Participation

ALT-Placement Project:

Investigating Adaptive Learning Tools for Mathematics Remediation and Placement

The Kirwan Center is seeking institutional partners from across Maryland to participate in a Kresge Foundation funded project starting in Spring 2018 that will pilot the efficacy and feasibility of replacing the high-stakes mathematics placement exam process currently in use with a process that empowers students to assess and remediate their mathematics knowledge using adaptive learning tools instead. Our hypothesis is that these adaptive tools will deliver just-in-time skills remediation while also providing better diagnostics that will be a more reliable measure of students' knowledge, thus enabling more accurate mathematics course placements that will increase persistence and lower costs.

Rationale

Among the many obstacles college students face in their pursuit of higher education is the discovery that they are insufficiently prepared for a college-level curriculum and must enroll in remedial courses to make up deficits in their knowledge and skills. This detour from college-level courses is expensive in both time and money, and it often means the end of the college road for these students, particularly for those deficient in mathematics. According to a U.S. Department of Education study (NCES, 2013), only 27 percent of all students enrolled in developmental math will complete their degrees.

For most students, placement into developmental courses is determined solely on the basis of whether their score is above or below a certain cutoff on a one-time, high-stakes, diagnostic exam taken shortly after being admitted. Increasingly, researchers are calling into question the validity of these exams and the remedial "treatment" that is assigned based on the outcomes of these assessments. Given the fact that developmental education so clearly increases costs, decreases persistence, and ultimately hinders students' success, institutions need more precise ways to determine students' mathematics knowledge deficits and remediate them more effectively.

The Project

The Kirwan Center has recently received a $150,000 grant from the Kresge Foundation to pilot a project comparing the current process of using high-stakes exams with adaptive learning platforms to evaluate whether this "alt-placement" approach allows more accurate assessment of students' knowledge. In this project we will develop, test, and improve the proof of concept; track incoming students through their first credit-bearing mathematics course; and evaluate the efficacy and feasibility of the alt-placement process.

Interested institutions will be asked to select one of the following use cases as the basis for their pilot during the 2018-2019 academic year:

Use Case #1: Adaptive Learning Tool to prepare for retaking high stakes placement test. New students take the high stakes placement test exam to determine their math course placement. Based on resulting scores, students who place into developmental math courses are then provided the opportunity to use the adaptive learning tool as an intervention and to retake high stakes placement test with a goal of helping them place out of developmental math courses.

Use Case #2: Adaptive Learning Tool as preparation for high stakes placement test. New students would be sent an email informing them about the importance of college-math readiness to ensure college success and directing them to your website. Students would be encouraged to be honest while completing their diagnostic assessment, so they could have a clear picture of the skill gaps that would need to be addressed by working through their study path and improving their scores prior to taking the initial high stakes placement test placement exam.

Use Case #3: Adaptive Learning Tool for low-stakes math placement. New students would begin by using the adaptive learning tool to diagnose gaps and develop mastery of prerequisite math concepts required for success in targeted college-level math courses. It would be emphasized that the diagnostic exam is not a high-stakes test, but an inventory of their math skills. This approach has the potential to be more efficient than the old approach of test-and remediate. Students would take an assessment upon acceptance, then work through their individualized study paths to avoid developmental math courses.

For the institutions agreeing to participate in the 2018-19 pilot, the Kirwan Center project team will provide:

- No cost access for the duration of the pilot to either NROC's EdReady Math platform or ALEKs for mathematics diagnostic assessment and remediation.
- Professional development for instructors and staff engaged in the pilot on how to effectively utilize the adaptive learning tool and resulting data.
- A team of researchers from UMUC's Center for Innovation in Learning and Student Success (CILSS) to support the evaluation of the pilot.
- A small sub-award (estimated at $1000-$1500, final amount dependent on the number of institutions engaged) to be used to support professional development, stipends, or other resources for the faculty and staff participating in the pilot.
- Institutional Research Board (IRB) approval for the Kirwan Center/CILSS and support for obtaining IRB approval at your institution, as needed.

Institutions participating in the pilot will be expected to commit to the following:

Winter 2018: Preparation

- Assign a project team, including at minimum a project lead, at least one mathematics faculty member, and a research/data liaison to work with UMUC CILSS study team.
- Reach agreement with the UMUC CILSS study team about the configuration of the pilot and the particular use case being evaluated.

- Commit to involving a minimum of 150 students (75 students in pilot group and 75 students in comparison group) or 10% of your incoming students.
- Obtain all administrative approvals and resolve administrative issues: secure institutional and departmental approval; work with the UMUC CILSS study team to secure IRB approval (if necessary); sign the data sharing agreement and arrange for the collection and transfer of student-level administrative data to the UMUC CILSS study team; establish a process for assigning student ids in adaptive learning tool that aligns to the campus student identifier process.
- Come to some consensus with the other participating institutions on a common set of content used for placement and consistent target scores.
- Identify the staff and faculty who will be leading and participating in the pilot and arrange for those individuals to participate in professional development over the course of the pilot.

Spring 2018 - Spring 2019: Pilot

- Utilize the adaptive learning tool within the parameters of the use case selected.
- Coordinate with the UMUC CILSS study team to help administer all data collection instruments and assessments, including possible surveys and/or focus groups with students, faculty, or staff. This may require involvement in calls or trainings to prepare for these activities.
- Facilitate access to institutional administrative student-level data for students in both the pilot and comparison groups as requested by the UMUC CILSS study team. Historical data may be requested.
- Participate in one or more conferences or other gatherings to report on and discuss results, both among the participants and, as appropriate, with funders and others interested and invested in this and related work.

Winter 2018 - Spring 2019: Reporting Requirements

- Participate in monthly check-in calls and respond to monthly pre-call project update emails sent by project staff to project leads.
- Respond to periodic requests for progress reports sent by project staff to project leads.
- Transmit required data items to UMUC CILSS study team on the agreed-upon schedule.
- No other project or budget reporting will be required.

Anticipated Timeline

November 22, 2017: Call for Participation responses due

December 1, 2017: Notification of Awards

December 4-22, 2017: Institutional calls

January 2018: Project kickoff meeting (in person)

January - April 2018: Planning; professional development

February - August 2018: ALT-Placement for Fall 2018; monthly check-in calls

September - October 2018: Data collection/analysis; project meeting to discuss 1st round outcomes; planning for 2nd round

November 2018 - January 2019: OPTIONAL ALT-Placement for Spring 2019; monthly check-in calls

February - April 2019: Data collection/analysis; Final evaluation report; end of project meeting; work on Phase 2 funding proposal.

Response to Call

If your institution is interested in participating in the 2018-19 pilot, please submit by Wednesday, November 22nd at 5:00 pm a 2-3-page overview outlining the intended use case that your institution would like to pilot.

Your overview should include:

- A description of your current mathematics placement process and cut scores.
- Which adaptive learning tool you intend to pilot (NROC EdReady or ALEKS)?
- Which use case you intend to pilot?
- The projected number of students you plan to engage in the project.
- Plans for outreach and engagement to ensure student participation.
- A timeline for implementation of the selected use case at your institution.
- Project team names, role on project, and contact information (please indicate a project lead, at least one mathematics faculty member, and a research/data liaison to work with UMUC CILSS study team).
- Any additional information that will help us to understand your institutional context.