

Case Study

College Algebra at Arizona State University



Contents

About the Supporting Organizations	3
Background	4
Course Redesign	4
Project Contact	5

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About the Supporting Organizations



Every Learner Everywhere is a network of twelve partner organizations with expertise in evaluating, implementing, scaling, and measuring the efficacy of education technologies, curriculum and course design strategies, teaching practices, and support services that personalize instruction for students in blended and online learning environments. Our mission is to help institutions use new technology to innovate teaching and learning, with the ultimate goal of improving learning outcomes for Black, Latinx, and Indigenous students, poverty-affected students, and first-generation students. Our collaborative work aims to advance equity in higher education centers on the transformation of postsecondary teaching and learning. We build capacity in colleges and universities to improve student outcomes with digital learning through direct technical assistance, timely resources and toolkits, and ongoing analysis of institution practices and market trends. For more information about Every Learner Everywhere and its collaborative approach to equitize higher education through digital learning, visit www.everylearnereverywhere.org.



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Achieving the Dream (ATD) leads a growing network of more than 277 community colleges committed to helping their students, particularly low-income students and students of color, achieve their goals for academic success, personal growth, and economic opportunity. ATD is making progress in closing equity gaps and accelerating student success through a unique change process that builds each college's institutional capacities in seven essential areas. ATD, along with nearly 75 experienced coaches and advisors, works closely with Network colleges in 44 states and the District of Columbia to reach more than 4 million community college students. Follow ATD on Twitter, Facebook, and LinkedIn.



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College Algebra at Arizona State University

How ASU removed barriers and increased undergraduate success

Background

ASU is a public research university with nearly 90,000 undergraduate students attending classes across 6 campuses in Tempe, Arizona, and 38,000 students attending online classes. The student population is 46% minority students and 27% first-generation college students.

Course redesign: How ASU removed barriers and increased undergraduate success

To address the challenge that College Algebra presented, ASU redesigned the course for fall 2016 and incorporated three key changes recommended by faculty: elimination of the developmental math course that had preceded College Algebra for many students, implementation of the McGraw Hill ALEKS® adaptive courseware, and an addition of a flexible “stretch” semester. Additional information on the rationale for each change is provided below.

- **Eliminating developmental math:** The recommendation to eliminate the developmental math course was based on the latest research in developmental education. ASU data indicated that the course offered no demonstrable benefit in the College Algebra course outcomes. Furthermore, requiring students to take an additional semester of noncredit math caused them to fall behind in their degree program.
- **Implementing the McGraw Hill ALEKS adaptive math system:** ALEKS provided each student with a personalized study plan based on his or her incoming knowledge and provided remediation when needed. This allowed students who entered the course with different levels of preparedness to all receive customized support.
- **Adding a “stretch” semester:** A “stretch” semester allowed students who needed more time to complete the course to be given a “continuation” grade and the ability to take the class again for free the following semester. During that “stretch” semester, students were able to pick up where they left off in the ALEKS course, which helped them maintain momentum and complete the course successfully at no additional expense.

The combination of these three approaches was key to increasing the success rate for all students taking College Algebra by 20% (when compared with the prior year’s fall cohort). This translated into over 800 additional students passing the course during the 2016– 2017 academic year as compared to the prior year. This shows that a successful implementation is not just about the design of a course, but also the development of supports and policies that allow the adaptive course to be successful. It also shows the impact of giving faculty a leading role in the implementation process.

If you want to learn more about the College Algebra program at ASU, please visit [Arizona State has seen some early success implementing adaptive courseware in algebra classes.](#)

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