Implementing Personalized Adaptive Learning at the University of Central Florida
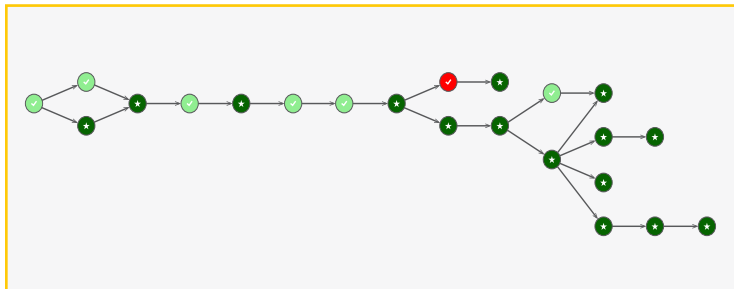
Challenge

At the University of Central Florida (UCF), it has been a challenge to increase student success in large-enrollment gateway courses. Traditionally, these courses have had unacceptably high levels of D and F grades as well as course withdrawals. Failures in such gateway courses also prevent students from proceeding into STEM and other degree programs.

Solution

To address these challenges, we have explored personalized adaptive learning (PAL) to combine well-designed courses with a capable adaptive learning platform; we have seen that this combination can lead to increased rates of student success in key general education offerings and major-specific foundation courses. The adaptive courseware determines student knowledge to recommend unique learning pathways that continuously adjust to guide students through content as quickly as possible, with the highest level of mastery. The PAL course design methodology includes:

A Realizeit Module Learning Map

1 Constructing a learning map for the particular course or program, including connections to other related courses or disciplines.

2 Chunking the learning content into modules and smaller lessons as well as establishing how those lessons interrelate for prerequisite/remediative content and cognitive/difficulty levels.

3 Applying alternative and effective delivery modalities for particular concepts, including text, images, videos, and interactive case studies.

4 Using formative assessment and targeted feedback continuously to drive learning and to ensure competency acquisition.

Learning Impact Outcomes

PAL courses have demonstrated improved student success, retention, and satisfaction. In our course redesign initiative, most redesigned PAL courses showed an increase in student success compared to the same class without PAL. The positive impact includes:

- Improved student success by providing just-in-time personalized scaffolding on challenging concepts and problems, remediation, and acceleration that drives degree completion.
- Improved course retention in high-enrollment, general education gateway college courses that typically have higher withdrawal rates and lower rates of success across all disciplines and demographic groups.
- Improved learning equality by providing personalized adaptive resources to all students across course modalities and diverse demographic segments.
- Improved student satisfaction for providing personalized learning interventions based on student-specific analytics in large-enrollment classes.

Return on Investment

Beginning in 2014, UCF has strategically implemented adaptive courseware to positively impact student success in gateway courses. The PAL initiative continues to be an innovative effort to provide students with individualized learning experiences at scale. In collaboration with 73 instructors, we have served 43,898 students in 363 separate course sections through our enterprise adaptive platform (Realizeit). These are undergraduate and graduate courses delivered in fully online, blended, and face-to-face modalities. Course subjects include College Biology, Intermediate Algebra, College Algebra, College Physics I & II, Statistics for Educational Data, Elementary & Intermediate Spanish, Lodging Foundations, and Business.

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