Utah Valley University

ALEKS PPL Case Study

Placement, Preparation, and Learning

Placement and Pass Rates Improve with ALEKS PPL

Prior to using ALEKS PPL, Utah Valley University (UVU) placed students into math courses using a variety of measures, each with a two-year expiration: the ACT math subscore, Accuplacer, and UVU prerequisite course grades. Based on this setup, the school faced several challenges in its curriculum and success rates.

First, many students needed to take a sequence of up to four developmental math courses before reaching a course that fulfilled their general education (GE) or college-level math requirements. College-level math requirements can be fulfilled by College Algebra, Intro to Statistics, and Quantitative Reasoning. As a result, thousands of students were taking up to two years of developmental math courses before reaching a college-level math course. Failure rates in all developmental math and college-level math courses were around 35% including withdrawals, failing grades, and D grades.

Utah also has a high number of young people (aged 18–21) who leave for two years for religious service and need to re-establish math placement upon return to university. These students routinely received Accuplacer scores placing them into low-level developmental math courses that they ended up retaking multiple times before being allowed to enroll in a course that counts for college-level math credit.

UVU faced other challenges with Accuplacer, such as inconsistent Accuplacer results (a student could test multiple times on consecutive days and get vastly different placement results) and Accuplacer rarely placing the student into college algebra (approximately 75% of incoming students were deemed not ready for college-level math based on Accuplacer results). Students were at widely different levels of preparation and readiness for the courses into which they were placed. The curriculum in the developmental courses contained significant overlap in material due to necessary review required to help less-prepared students become ready for the material taught in higher-level courses.

> ***ALEKS PPL has been a game changer for our campus. Students are now routinely placing directly into college-level math courses after working in the ALEKS PPL Prep and Learning modules. Students don't need to repeat entire courses when their math skills are rusty; they only need a focused refresher to help them brush off their skills and move forward."***
>
> Tiffany Evans, Senior Director of Program Completion; Carolyn Hamilton, Associate Math Professor



Implementation

Initial Pilots

UVU began using ALEKS PPL for placement with three pilot groups starting Summer 2015 through the Summer 2016.

- **Pilot #1 Summer 2015:** 50 students who placed into Intermediate Algebra were invited to take a 3-week refresher course using the ALEKS Prep module for College Algebra. Of the 50 students, 24 (48%) were placed into College Algebra; of those, 80% passed their College Algebra course with a B average.
- **Pilot #2 Spring 2016:** UVU contacted 35 students who had dropped out of the university with all credits toward graduation completed except a liberal arts GE math course. A six-week Math Completion workshop was created using ALEKS PPL to help these students refresh their math skills and place them into a GE math course. 22 of the 35 students (63%) were placed into a GE math course after using ALEKS PPL and graduated within six months.
- **Pilot #3** Summer 2016 Math Leap Boot Camps: UVU used money reserved for math initiatives on campus to pay for a few faculty members to create and teach a refresher course using ALEKS PPL. They created Math Leap boot camps using ALEKS PPL. The boot camps have expanded and are now offered throughout the year.

In Fall 2016, the university moved forward with ALEKS PPL, creating a 1 credit hour, 7.5 week-long, pass/fail credit refresher course with guided placement preparation led by university faculty. The class, Math100R, has helped to expedite students' paths into their college-level math courses, saving them time and money, and ultimately improving graduation rates.



- By Fall 2017, ALEKS PPL replaced Accuplacer as the math placement tool at UVU, and the university funded institution-paid access to ALEKS PPL for all current, incoming, and transfer students with less than 45 UVU credit hours.
- That semester, 965 students enrolled in 28 sections of Math 100R. Students worked an average of 30.1 hours in their Prep and Learning modules and mastered approximately 105 topics. They also improved their placement scores by an average of 15 points, eliminating the need for at least one remedial math course per learner.
- Instead of starting their math pathway during a summer boot camp, students were advised to take Math 100R during the academic year. Even with this perceived delay, students finished their college-level math classes earlier. Overall, UVU has seen an increase in GE completion at all levels.





Current Set Up

Math Placement

ALEKS PPL is now used to place all students who have not taken a math course for more than two years, have an ACT math subscore more than two years old, or who want to improve math placement.

Students are allowed five attempts at the ALEKS PPL assessment; only proctored assessments are considered official. The first three attempts can be taken un-proctored, and the last two must be proctored so that students don't unwittingly use all their attempts without establishing official placements.

Students are required to spend three hours in the ALEKS Prep & Learning Module between proctored assessments. If a student took an un-proctored assessment at home for practice, they could take a proctored assessment for official placement without doing the three required hours in the Prep & Learning Module.

> ***Math 100R, because it is a credit-bearing class, provides incentive for students to work consistently in ALEKS. When they work in ALEKS consistently, their math skills return and as a result, 64% are able to place directly into their college-level math class. Students who were college math-ready in high school are now, once again, ready for a college-level math course."***
>
> Kathy Andrist, Math 100R Co-Director

Enhanced General Education Math Courses

The accuracy of ALEKS PPL placement enables UVU to identify students who are "almost ready" for their required college-level course but have slightly lower than the required placement scores. Students are able to meet their college-level math requirement in an enhanced course that provides prerequisite content and just-in-time remediation in addition to all the regular course content. The courses that provide this are Math 1035, Quantitative Reasoning with Integrated Algebra, Stat 1045, Introduction to Statistics with Algebra, and Math 1055, College Algebra with Preliminaries. Pass rates are similar between the regular courses and the enhanced courses.

Math 100R

A key component of UVU's implementation of ALEKS PPL is Math100R; the one credit hour guided placement course taught by full-time math faculty members. The course is offered each block (every 7 ½ weeks) of every semester including summer semesters, and class size is capped at 40 students per section. Advisors recommend that students take MATH 100R during their first semester instead of attempting to take a regular math course.

On the first day of MATH 100R, students take a proctored ALEKS PPL assessment in class. The course's curriculum is ALEKS PPL, and students must work at least six hours per week in the Prep & Learning Module to receive credit for the course. The course is graded as credit/no credit.

During class, instructors help students with questions and guide them through general problem solving activities that are not algebra dependent. The instructors also meet with students individually on a weekly basis to track their progress. Students are advised regarding the math requirements for their major, the corresponding ALEKS PPL score needed, and the amount of time it will require in ALEKS PPL to achieve that score. On the last day of class, students take another proctored ALEKS PPL assessment and are advised about their math pathway to graduation.

Results

1. Accurate Placement

Since ALEKS PPL was implemented for math placement, pass rates (those passing with a C or higher) have improved to 70% or higher across the math curriculum.

2. Students Save Time and Money

Math 100R students advance into the next math course at the same or higher rate as students who take the prerequisite course. Math 100R is a one credit hour course, while prerequisite courses are four to six credit hour courses. Math 100R students spend only 15–25% of the time required by the prerequisite course to get to the next math course, saving them time and money.







64%

of the Math 100R students improved their course placement to place into their required college-level math course.



$3M

ALEKS PPL has saved students approximately $3,000,000 in tuition from Fall 2016 to Summer 2022 by helping them to skip math courses that could otherwise have impeded their academic track.

> ***ALEKS PPL (and the Math 100R course) is the most efficient route to a college-level math course, and the likelihood of achieving an A in that college-level math course is just as likely as if the student took the prerequisite course."***
>
> Kathy Andrist, Math 100R Co-Director

3. Student Success

The GPA and pass rates for students who test into a class using ALEKS are statistically indistinguishable from the GPA and pass rates of students who place into the class by completing the prerequisite course.

Figure 1:
Pass Rates in Subsequent Course

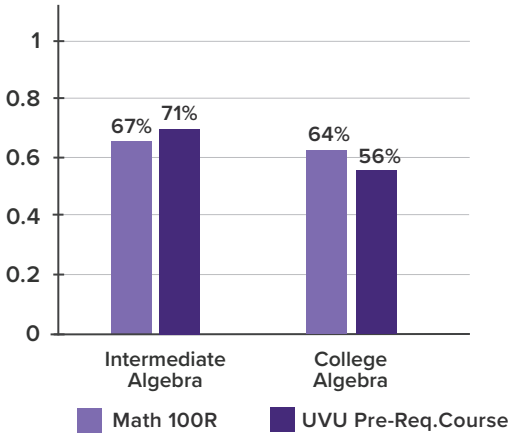
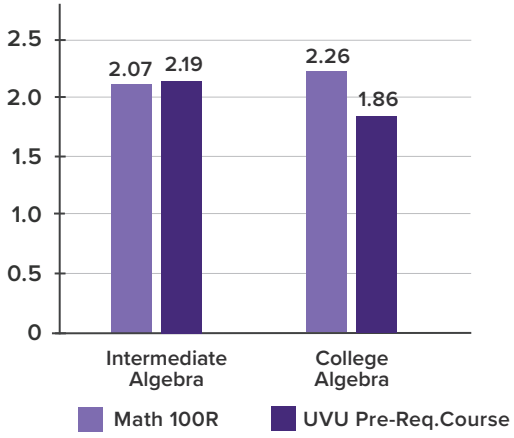


Figure 2:
GPA in Subsequent Course



Conclusion

ALEKS PPL has proven to be a reliable placement tool for UVU. Due to “rusty” math skills, many students are under-placed based on what they can do within a targeted review after the initial ALEKS PPL assessment. These students pass their next course with GPAs and pass rates equal to or higher than those who complete the prerequisite course. Math 100R students spend 15–25% of the time required in the prerequisite course (1 credit hour vs. 4–6 credit hours), saving millions of dollars total in tuition.

Institution Profile

Utah Valley University is a public university located in Orem, Utah that serves approximately 37,000 students annually. Founded in 1941, it is the largest public university in the state of Utah and offers numerous certificate and diploma programs, as well as associate's degrees, bachelor's degrees, and master's degrees. Throughout its history, UVU has responded to its service region's (Utah, Wasatch, and Summit counties) population changes and business/industry needs, which is evidenced in its mission, program offering, degree level, and enrollment changes.

Instructor & Administrator Profiles

Tiffany Evans is the Senior Director of Program Completion in the Division of Academic Affairs at UVU. She has 25 years of experience in higher education administration including 15 years at Utah State University as Executive Director of Student Involvement and Leadership. She is passionate about programs that will help students achieve their goals in higher education at open-admissions institutions.

Carolyn Hamilton, Associate Professor, has taught mathematics at UVU for 25 years, including chairing the Math Department for several years. Her deep concern for student success led to the implementation of innovative refresher workshops for re-entry students and a program of mass advising for math courses. She is currently the business calculus coordinator in the Department of Strategic Management and Operations.

Kathy Andrist joined the UVU math faculty in 2000. She is committed to student success, enjoys teaching, and is engaged in activities that enrich UVU's learning environment. Past services include being the Math Club advisor, UVU General Education chair, and a member of the Board of Directors for the Mathematics Association of America (MAA). Currently, Dr. Andrist is co-director of Math 100R and a member of the Math Department Rank, Tenure and Promotion committee, and associate chair of the Math department.

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