

Making a Difference in Math

Overview

SB 196 *Math Competency Initiative (Millner/Gibson)*, passed during the 2015 Utah legislative session, encourages high school students to complete a higher education math, or Quantitative Literacy (QL), requirement prior to graduating from high school. The State Board of Regents partnered with the Utah State Board of Education (USBE) to implement this initiative in various ways including setting [qualifying scores on national exams](#) for math competency, creating math pathways for concurrent enrollment (CE), and increasing the types of CE QL courses available and the number of sections offered.

The Utah System of Higher Education (USHE) has focused its effort on helping students complete their QL requirement through concurrent enrollment. In the last 18 months, with the help of various committees including representatives from USHE institutions, USBE, and Local Education Agencies (LEAs), USHE developed math CE Exploratory Majors Pathways, awarded Math Teacher Preparation Grants, created a CE QL Math Incentive for high schools, and launched a CE Math Recruitment Pilot program. Concurrent enrollment data from the 2016-17 academic year shows that the effort has been successful: Utah is starting to move the needle on math completion, and more students are meeting their QL requirement through CE.

Math CE Exploratory Majors Pathways

The [Concurrent Enrollment Exploratory Majors Pathways](#) is an advising framework for high school counselors, parents, and students. It groups related majors into broad USHE-specific pathways similar to the national meta-majors movement. Students are advised to consider the QL course or courses associated with the pathway of most interest to them. The pathways showcase three QL courses, MATH 1030 *Introduction to Quantitative Reasoning*, MATH/STAT 1040 *Introduction to Statistics*, and MATH 1050 *College Algebra*. Historically, MATH 1050 has been the second highest enrolling CE course while 1040 and 1030 have only attracted several hundred students. 2016-17 CE enrollments saw small increases in 1040 and moderate increases in 1030 courses. In part as a result of dialogue around development of the pathways, USHE institutions have evaluated the QL requirement for all college majors. This may result in additional increases in QL completion in high school as students take the most appropriate CE QL course based on their meta-major or major area of interest. USHE has presented the pathways at both the USBE and USHE state-wide high school counselor conferences.

Math Teacher Preparation Grants

USHE institutions applied for state funding (appropriated through SB196) for initiatives that: (1) increase the number of high school teachers eligible to teach CE math courses, (2) increase the number of CE QL math sections offered, and (3) increase the number of high school students who complete a QL Math requirement through CE. Institutions approached these initiatives and identified a variety of ways to meet their outlined goals and objectives including instructor of record models (mentoring of high school teachers by university math faculty), teacher professional development, and tuition reduction for teachers to register for graduate-level mathematics coursework. Six USHE institutions initiated the math teacher preparation grant initiatives in 2016-17 and two institutions in 2017-18. In the early stages of these initiatives, all institutions are making progress toward the goals and making adjustments as needed.

CE QL Math Incentive

USHE offered to pay a Local Education Agency (LEA) for a qualified high school teacher’s “productivity period” to teach an additional CE QL section. Seven sections of CE MATH 1030, 1040, or 1050 were added Spring 2017 resulting in 174 additional CE QL enrollments. Due to the success of this pilot, the incentive program is continuing in the 2017-18 academic year. To date, 56 sections of CE QL Math courses have been added in 34 high schools.

CE Math Recruitment Pilot

The goals of the recruitment pilot are to: (1) use student performance data to identify students who seem qualified to enroll in a CE QL Math course senior year but have not self-selected and invite them to enroll in an appropriate CE QL Math course; (2) gather qualitative data from students and counselors on why students choose – or choose not – to take a rigorous math course their senior year; and (3) use data gathered to model reasonable goals for increases in CE QL Math enrollments statewide. Eleven public high schools across the state were invited to participate in the pilot Fall 2017; student enrollments and surveys will be completed Spring 2018.

2016-17 Outcomes

During 2016-17, all USHE institutions offered at least two of three CE QL Math courses. Increasing the type and number of CE QL Math sections likely contributed to the increase in the number of students earning CE QL Math credit: after a four-year decline in earned credit, 2016-17 appears to be a transitional year, with the effects of SB196 efforts having a decided impact.

