ISSUE BRIEF

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CONCURRENT ENROLLMENT – MATH

The question of course rigor is often raised in connection with Concurrent Enrollment courses when compared to their on-campus equivalents. Over one-third of all Utah high school juniors and seniors enroll in at least one concurrent enrollment course, courses in which students earn both high school credit for graduation and college credit corresponding to the first year at a college or university in the Utah System of Higher Education (USHE)

This brief compares students who take a postsecondary math course via concurrent enrollment with traditionally-enrolled college students at a USHE institution. This comparison attempts to demonstrate whether or not a student who takes a Math course through concurrent enrollment is less, as well, or better prepared to succeed in postsecondary Math courses.

METHOD:

Students enrolled in Math courses (MATH, MAT) greater than or equal Math 1010 during the 2014-15 academic year were selected and then enrollment in a subsequent math course during the 2016 academic year or the Fall Semester 2017 academic year was matched to their record. Data was selected from the Utah System of Higher Education (USHE) database student course table using end-of-term data.

Students who took either Math 1010 or Math 1050 during the 2015 academic year were matched with their Math enrollments during the 2016 and 2017 Academic Year. Analysis was limited to select math courses due to the number of students who completed each of the subsequent Math courses. Student were identified as concurrent enrollment students based on a value of "CC" in the student type data element. Data is grouped by those students who were concurrent enrollment at the time of completion of the first course compared to those who were regular college students.

FINDINGS:

There were 48,312 Math enrollments in Math 1010, 1030, 1040 or 1050 during the 2015 academic year. This included 7,667 students who were identified as concurrent enrollment students (student type = cc). Only 31% of concurrent enrollment students who took a Math course during the 2015 academic year have completed another math course. This compares to 40% of traditional college level students enrolling in another math course (table 1).

Table 1 - Subsequent Math Enrollments by 2015 Course and Student Type

	Concurrent Enrollment 2015			***Regular Student 2015***		
2015 Math Course	No Additional Math	Additional Math	Total	No Additional Math	Additional Math	Total
1010	62.6%	37.4%	2,676	49.6%	50.4%	19,255
1030	77.3%	22.7%	128	84.6%	15.4%	2,358
1040	74.4%	25.6%	425	79.7%	20.3%	3,941
1050	71.4%	28.6%	4,438	63.4%	36.6%	15,091
Grand Total	**68.6%**	**31.4%**	**7,667**	**59.6%**	**40.4%**	**40,645**

Math 1010

The data from students who were enrolled in Math 1010 during the 2015 academic year and then subsequently enrolled in Math 1030, 1040, 1050 or 1060 during the 2016 or 2017 academic years (where grades are available) was collected. While the size of the groups are significantly different, the average grade in the subsequent course taken on a college campus is slightly higher for students who completed Math 1010 as a concurrent enrollment student compared to those who completed Math 1010 on a college campus (table 2).

Table 2 - Subsequent Math Course GPA by Math 1010 Enrollment Type

	Subsequent Course 2016 or 2017 Academic Year							
	1030		1040		1050		1060	
Math 1010 During the 2015 Academic Year	N	Average Grade Points	N	Average Grade Points	N	Average Grade Points	N	Average Grade Points
Concurrent	41	2.48	71	2.50	382	1.99	94	2.25
Regular	1,058	2.32	1,179	1.97	5,163	1.94	1,194	2.17
Grand Total	1,099	2.33	1,250	2.00	5,545	1.94	1,288	2.17

Math 1050

Students who attempted Math 1050 during the 2015 academic year was matched to math enrollment records in courses that meet the basic quantitative literacy requirement (Math 1030, 1040, 1050, 1060*) during the 2016 or 2017 academic year. Some students who were enrolled in 2015 and attempted a Math course in 2016 or 2017 enrolled in a different Math course and others chose to repeat the Math 1050 course. On average, concurrent enrollment students in 2015 had a higher GPA than regular college students in a quantitative literacy course taken in 2016 or 2017 where the 2016/2017 Math courses were all taken on a college campus (table 3).

Table 3 - Subsequent Math Course GPA by Math 1050 Enrollment Type

	Subsequent Course 2016 or 2017 Academic Year							
	1030		1040		1050		1060	
Math 1050 During the 2015 Academic Year	N	Average Grade Points	N	Average Grade Points	N	Average Grade Points	N	Average Grade Points
Concurrent	DS	DS	157	3.05	163	2.01	256	2.45
Regular	DS	DS	489	2.42	1,586	1.66	1,471	2.13
Grand Total	DS	DS	646	2.57	1,749	1.70	1,727	2.18

When studying students who attempted Math 1050 in the 2015 academic year and subsequently take a course that exceeds the quantitative literacy requirement (Math 1210, 2010, 2020) on a college campus, the pattern continues to hold. Students who completed Math 1050 as a concurrently enrollment student have, on average, a higher grade in the next course taken (table 4).

*Math 1060 only fills the Quantitative Literacy requirement at institutions where it is valued at 3 credits

Table 4 - Subsequent Higher Math Course GPA by 1050 Enrollment Type

	Subsequent Course 2016 or 2017 Academic Year					
	1210		2010		2020	
Math 1050 During the 2015 Academic Year	N	Average Grade Points	N	Average Grade Points	N	Average Grade Points
Concurrent	241	2.45	87	3.30	54	3.31
Regular	1,232	2.04	294	2.95	319	2.96
Grand Total	1,473	2.11	381	3.03	373	3.01

Conclusion:

This study is a general overview of the effectiveness of concurrent enrollment Math courses. Its purpose is to see if there are any differences in performance based on whether or not a previous Math course was taken through concurrent enrollment or on a college campus. Based on the findings of this study, there does not seem be any evidence to support a claim that concurrent enrollment Math courses are less effective in preparing students for additional postsecondary study. There is some evidence that concurrent enrollment students perform better than students who take the traditional math course on a college campus. Since concurrent enrollment courses are offered virtually free of charge to high school juniors and seniors statewide, a student who completes concurrent enrollment math courses stands to not only perform as well as traditional college students in math, but just as importantly, achieve significant costs savings in foregone tuition in for the same course after high school graduation. In 2015, the Utah Legislature, with support of USHE, adopted legislation encouraging high school students to complete their college general education math requirement by taking advantage of concurrent enrollment math opportunities.

It should be noted that there are many possible causes for the differences observed in the data. For example, the difference in sample size between the two groups was very large making statistical comparisons difficult. Also, the student who enrolls in concurrent enrollment courses while in high school is often the better prepared student so the concurrent enrollment students are essentially a set of top performing students being compared to a general population of students.

Due to differences in sample size, and possible sample types, it would not be wise to determine that concurrent enrollment is “better” than traditional courses. The data does indicate that students who enroll in concurrent Math courses are not disadvantaged when they go on to enroll in another Math course on a college campus.