MATH Accelerated Courses Report

December 2017

INTRODUCTION

Primary Research Questions

1. What is the profile of students who take math accelerated courses compared to students in non-accelerated basic skills math courses?

2. Are learning outcomes different for students in math accelerated courses compared to students in non-accelerated basic skills math courses?

Cohort Groups

- Comparison Groups:
  1. Accelerated Math
     - MATH 092, MATH 047A
  2. Non-Accelerated Basic Skills Math Courses
     - MATH 046, MATH 096

- *Note 1. Summer terms omitted due to no math accelerated course offerings during these terms.*
- *Note 2. Course level is defined as the course in which accelerated and non-accelerated students would be eligible to enroll, based on their initial M30, M40 placement. Course level corresponds to Math Courses 046 and 096, respectively, allowing for cross-comparison of the accelerated and non-accelerated cohorts.*

Accelerated and Non-Accelerated Cohorts

Math Course Level	Accelerated	Non-Accelerated
Math Course Level 046	Placed at math level 30 (M30) (Basic Skills Level)	Enrolled in Math 046
Math Course Level 096	Placed at math level 40 (M40) (Associate Level)	Enrolled in Math 096
Other Course Level	Placed at levels other than 30 & 40	Placed at level other than 30 & 40
Overall	All accelerated students	All non-accelerated students

Note. Math 092 has a prerequisite assessment skill level of M30 Basic Skill and it covers material from both basic math skills MATH 046 and Associate level Math 096

Highlight of the Findings

- Overall, from 2012/13 to 2016/17, SDCCD has increased the number of accelerated math sections offered. The increase is mostly due to the accelerated math section increase at Mesa College, whereas City College/ECC sections offerings have remained stagnant and Miramar did not offer any accelerated math sections after Fall 2013.

- From 2012/13 to 2016/17, SDCCD has also shown an increase in accelerated course enrollments, again, largely due to the section increase at Mesa College. City College/ECC accelerated course enrollments have decreased slightly during this period. Miramar did not have accelerated math course enrollments after Fall 2013.

- Within the 2012/13 to 2016/17 academic years, SDCCD observed enrollment increases in math accelerated courses during the Fall and Spring terms (384 & 356, respectively) compared to non-accelerated math enrollments (-1,275 & -1,284, respectively). These enrollment increases are directly related to the Mesa College accelerated math enrollment increase for Fall and Spring (416 & 395, respectively).

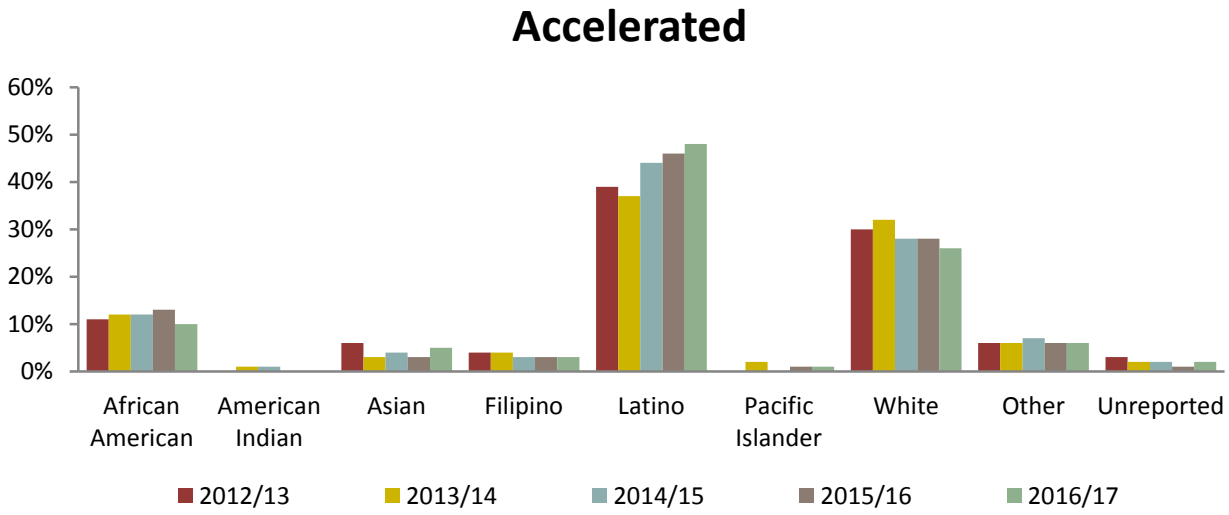
- The overall term persistence rates of Fall and Spring cohorts were higher for students in the accelerated math courses (82% & 72%, respectively) compared to students in the non-accelerated courses (79% & 70%, respectively).

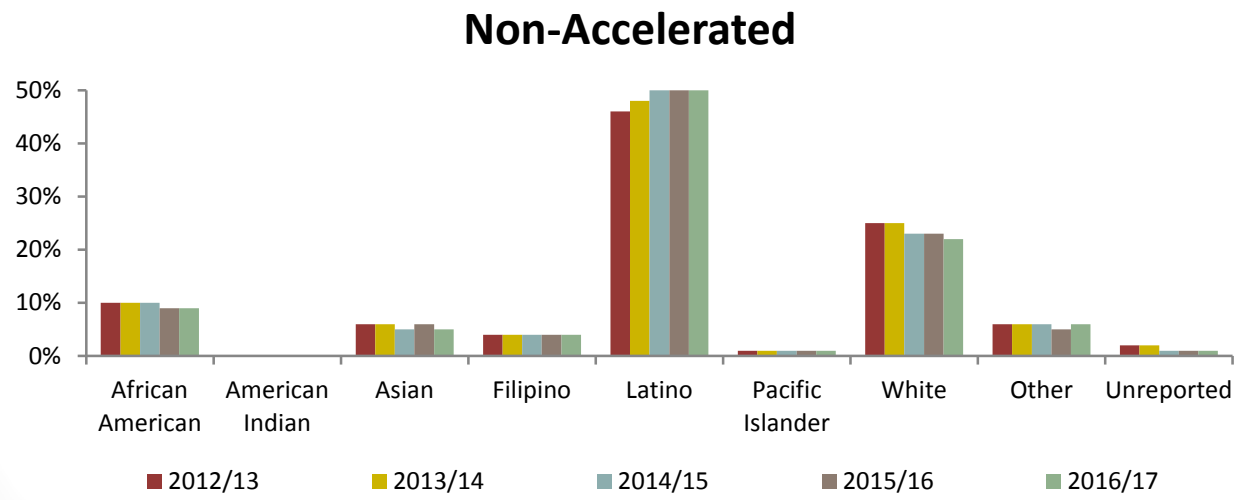
- A greater percentage of Fall and Spring accelerated math students (55% & 44%, respectively) subsequently enrolled in a transfer-level math course than students in non-accelerated math courses (30% each).

- The Fall accelerated math students who subsequently enrolled in a transfer-level math course successfully completed the course at the same rate as non-accelerated math students (59% each). However, the Spring accelerated students completed transfer-level math at a slightly lower rate than non-accelerated students (58% & 60%).

STUDENT PROFILE

Ethnicity



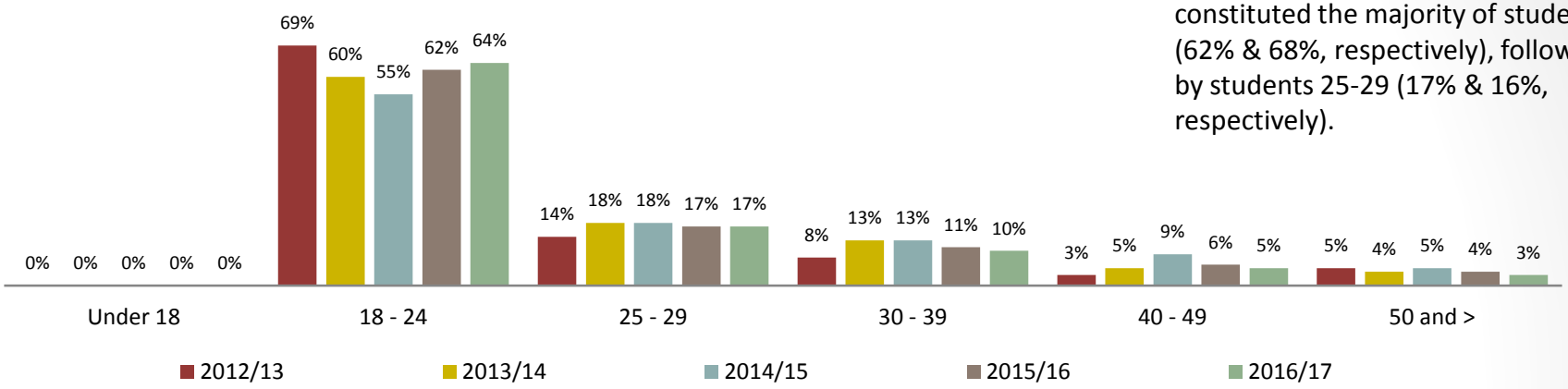


- Between 2012/13 and 2016/17 the ethnic groups that comprised the most students, on average, in both accelerated and non-accelerated math courses were Latino students (44% & 49%, respectively), White students (28% & 24%, respectively), and African American students (11% & 10%, respectively).
- Whereas the number of non-accelerated math students decreased 17% overall from 2012/13 to 2016/17, the overall number of accelerated math students increased by over 200% during the same time period.
- The largest increases in the accelerated courses were Latino students (344), White students (164), and African American students (63).

Source: SDCCD Information System

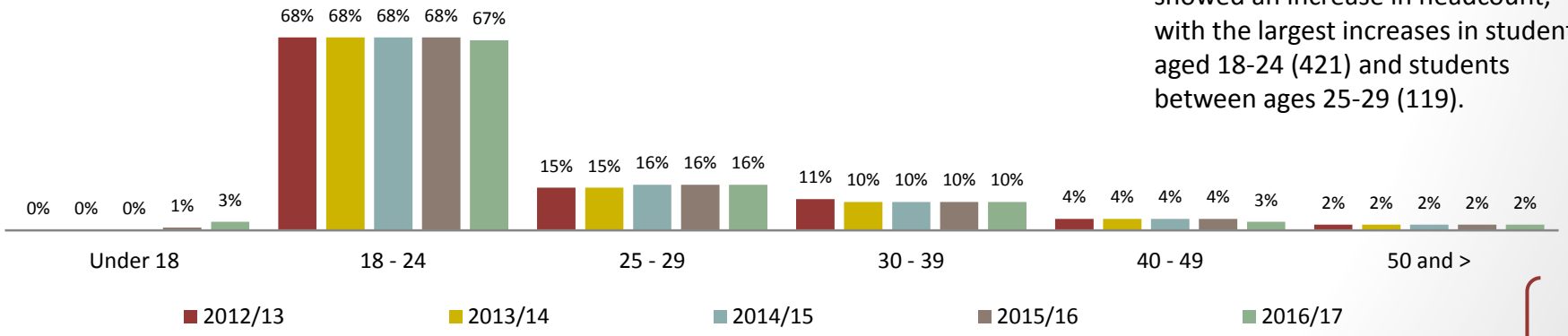
Age

Accelerated



- On average, between 2012/13 and 2016/17 in both accelerated and non-accelerated math courses, students who were between ages 18-24 constituted the majority of students (62% & 68%, respectively), followed by students 25-29 (17% & 16%, respectively).

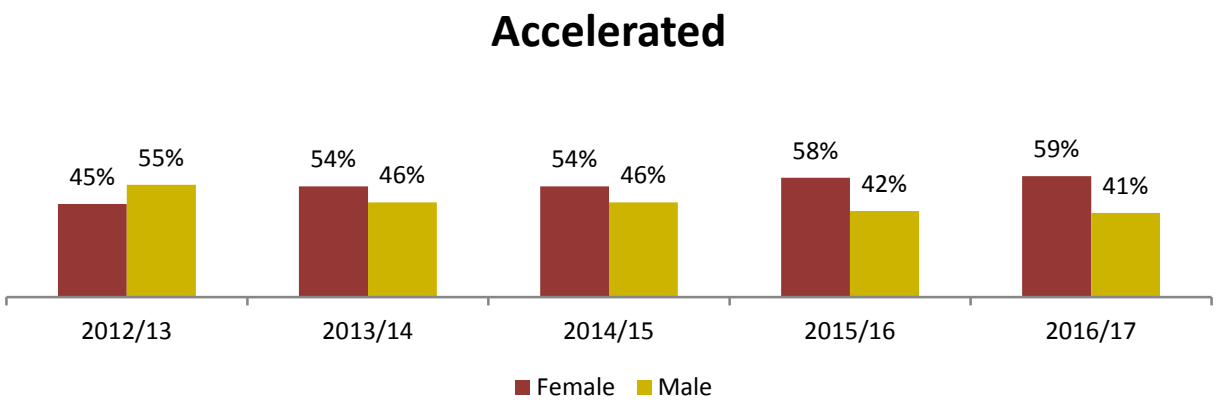
Non-Accelerated

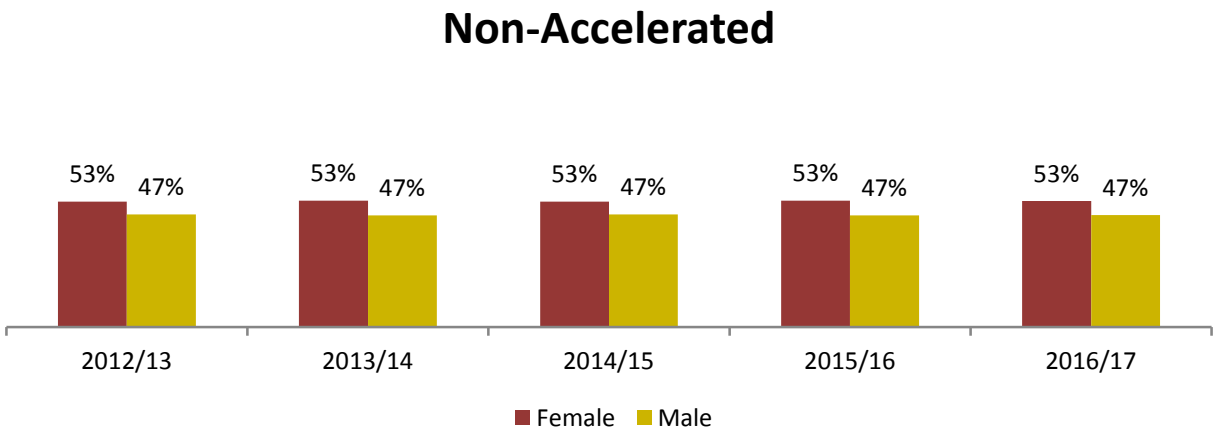


- In accelerated math courses between 2012/13 and 2016/17, all age groups showed an increase in headcount, with the largest increases in students aged 18-24 (421) and students between ages 25-29 (119).

Source: SDCCD Information System

Gender



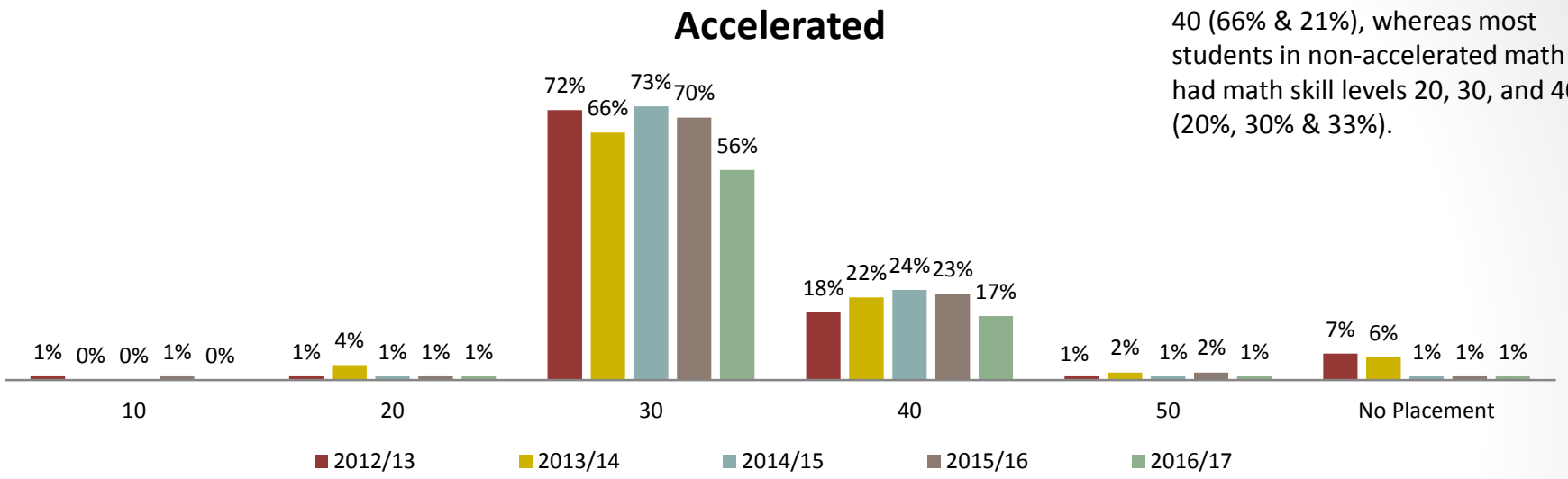


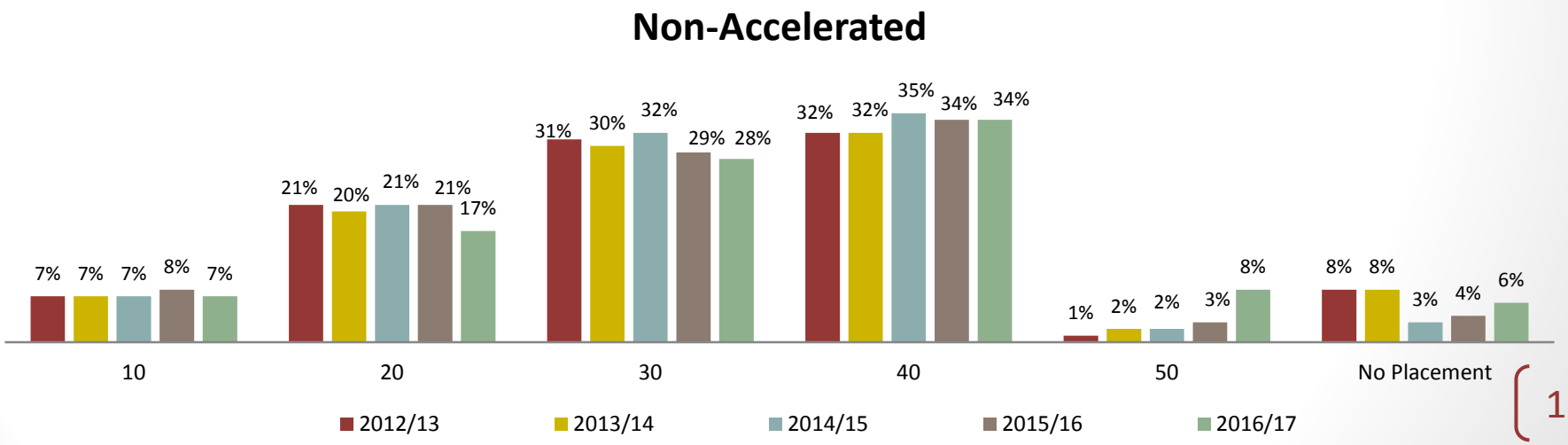
- On average, from 2012/13 to 2016/17, the female student headcount in accelerated math courses was slightly higher (56%) than their male student counterpart (44%).
- Between 2012/13 and 2016/17 both female and male students in accelerated math courses increased (434 & 239, respectively), while female and male students in non-accelerated math decreased (1,036 & 925, respectively).

Source: SDCCD Information System

Math Skill Levels

- Between 2012/13 and 2016/17, on average, the majority of students enrolled in accelerated math courses had math skill levels 30 and 40 (66% & 21%), whereas most students in non-accelerated math had math skill levels 20, 30, and 40 (20%, 30% & 33%).





Source: SDCCD Information System

SECTIONS AND ENROLLMENTS

Fall Accelerated Section Offerings

	Fall 2012	Fall 2013	Fall 2014	Fall 2015	Fall 2016	Total	Fall 2013 to Fall 2015 Difference
City College/ECC	2	3	3	2	2	12	0
Mesa College	3	5	6	11	15	40	12
Miramar College	1	1	0	0	0	2	-1
All Colleges	**6**	**9**	**9**	**13**	**17**	54	11

- Overall, accelerated math Fall sections increased from 6 to 17 course offerings between Fall 2012 and Fall 2016.
- At City College/ECC accelerated math sections remained about the same between Fall 2012 and Fall 2016 (2 section each).
- At Mesa College accelerated math sections increased from Fall 2012 to Fall 2016 (3 & 15, respectively).
- Only one accelerated math section was offered at Miramar College in Fall 2012 and Fall 2013 each.

Source: SDCCD Information System

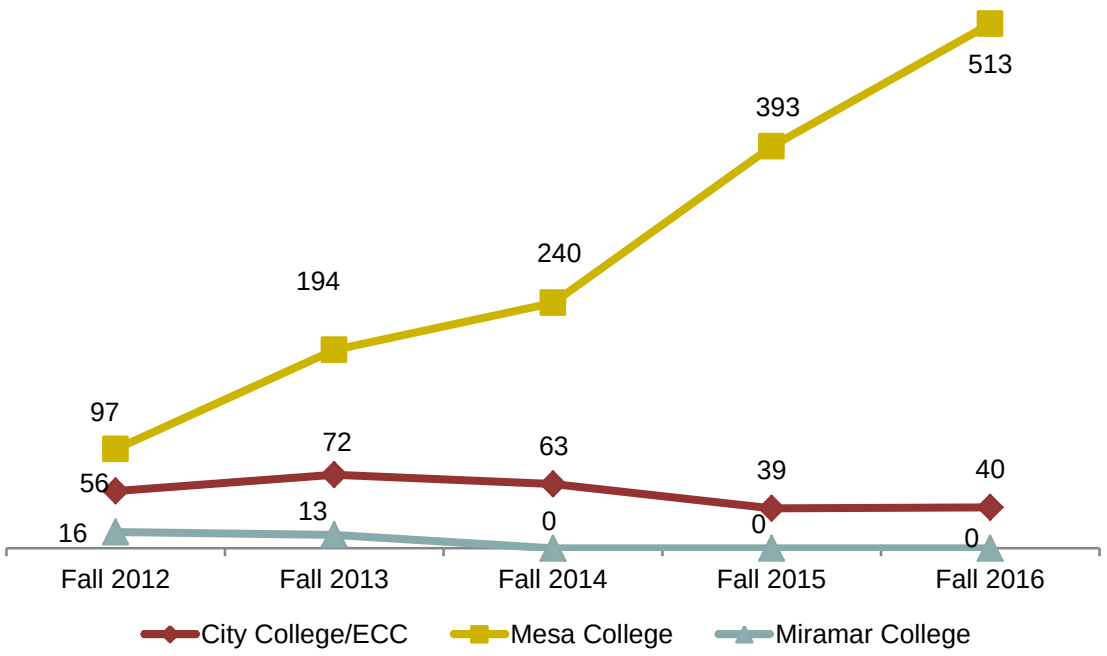
Spring Accelerated Section Offerings

	Spring 2013	Spring 2014	Spring 2015	Spring 2016	Spring 2017	Total	Spring 2013 to Spring 2016 Difference
City College/ECC	2	2	2	1	1	8	-1
Mesa College	4	5	9	10	16	44	12
Miramar College	1	0	0	0	0	1	-1
All Colleges	**7**	**7**	**11**	**11**	**17**	47	4

- Overall, accelerated math Spring course section offerings increased from 7 to 17 between Spring 2013 and Spring 2017.
- Between Spring 2013 and Spring 2017, accelerated math sections at City College/ECC remained about the same (1-2 sections per term).
- At Mesa College, Spring accelerated course offerings increased between 2013 and 2017 (4 & 16, respectively).
- Only one accelerated math section was offered at Miramar College in Spring 2013.

Source: SDCCD Information System

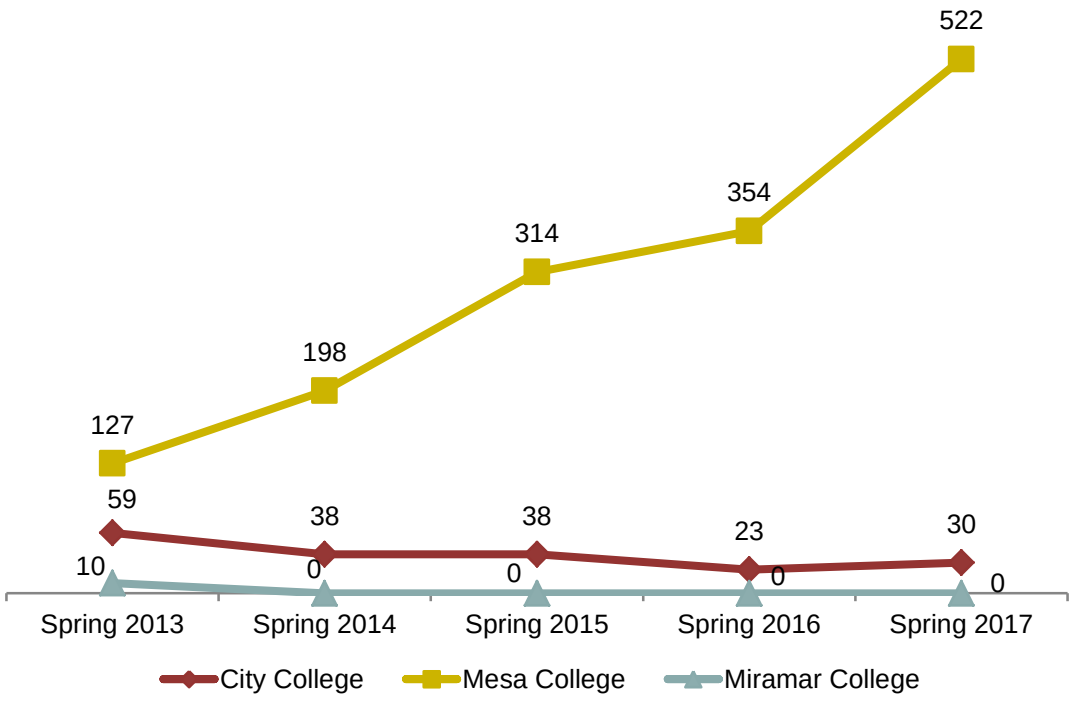
Fall Accelerated Course Enrollments



- Overall, accelerated math Fall enrollments increased from 169 to 553 between Fall 2012 and Fall 2016.
- At City College/ECC, accelerated math course enrollments decreased from 56 in Fall 2012 to 40 in Fall 2016.
- The number of accelerated math enrollments at Mesa College increased from Fall 2012 to Fall 2016 (97 & 513, respectively).
- At Miramar College, accelerated math enrollments in Fall 2012 and Fall 2013 remained about the same (16 & 13, respectively). There were no accelerated math sections offered at Miramar College after Fall 2013.

Source: SDCCD Information System

Spring Accelerated Course Enrollments

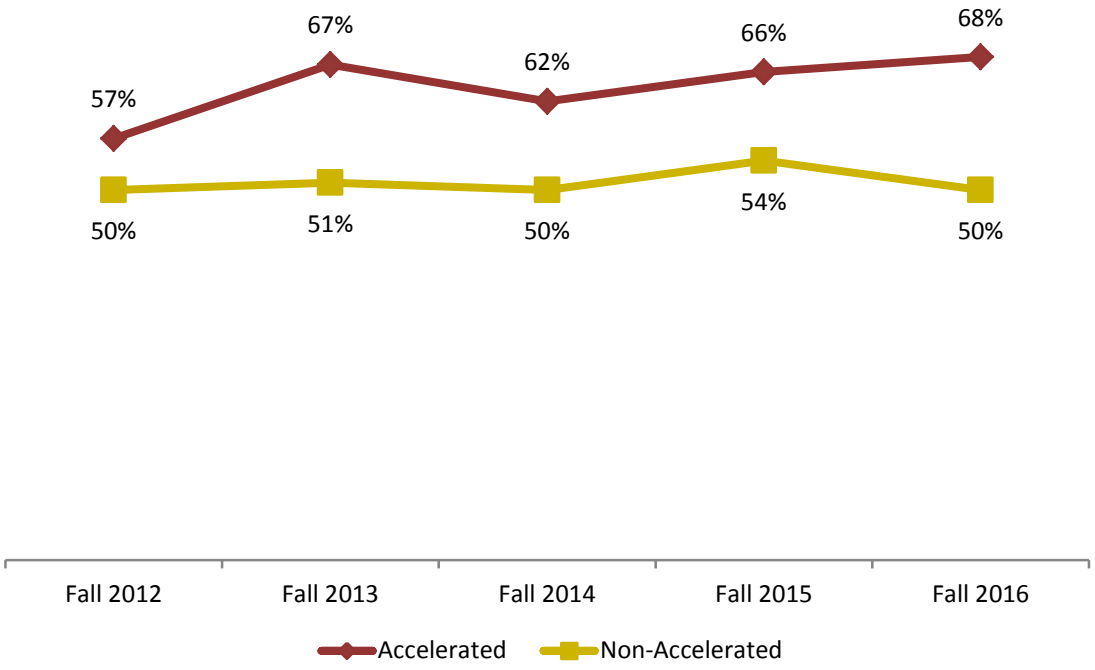


- Overall, accelerated math Spring enrollments increased from 196 to 552 between Spring 2013 and Spring 2017.
- Between Spring 2013 and Spring 2017, accelerated math enrollments decreased at City College/ECC (59 & 30, respectively).
- At Mesa College, accelerated math enrollments increased from Spring 2013 to Spring 2017 (127 & 552, respectively).
- Only one accelerated math section was offered at Miramar College between Spring 2013 and Spring 2017, which had an enrollment count of 10 students.

Source: SDCCD Information System

STUDENT OUTCOMES

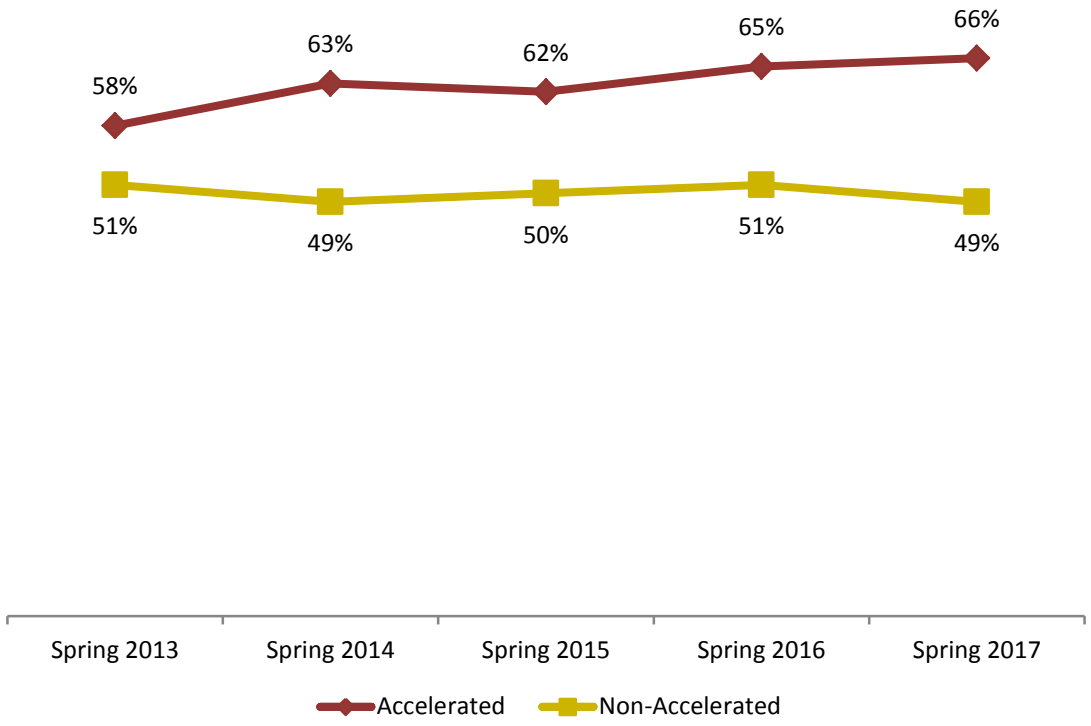
Fall Success Rates



- The 5-term average success rate of the Fall accelerated math cohorts was higher (65%) than the success rate of non-accelerated math students (51%).
- On average, the success rate of the Fall cohorts at the basic skills course level (Math 046) was higher for accelerated math students (62%) compared to non-accelerated math students (51%).
- The average success rate of students at the associate level (Math 096) was also higher for accelerated math students (73%) compared to non-accelerated math students (47%).

Source: SDCCD Information System

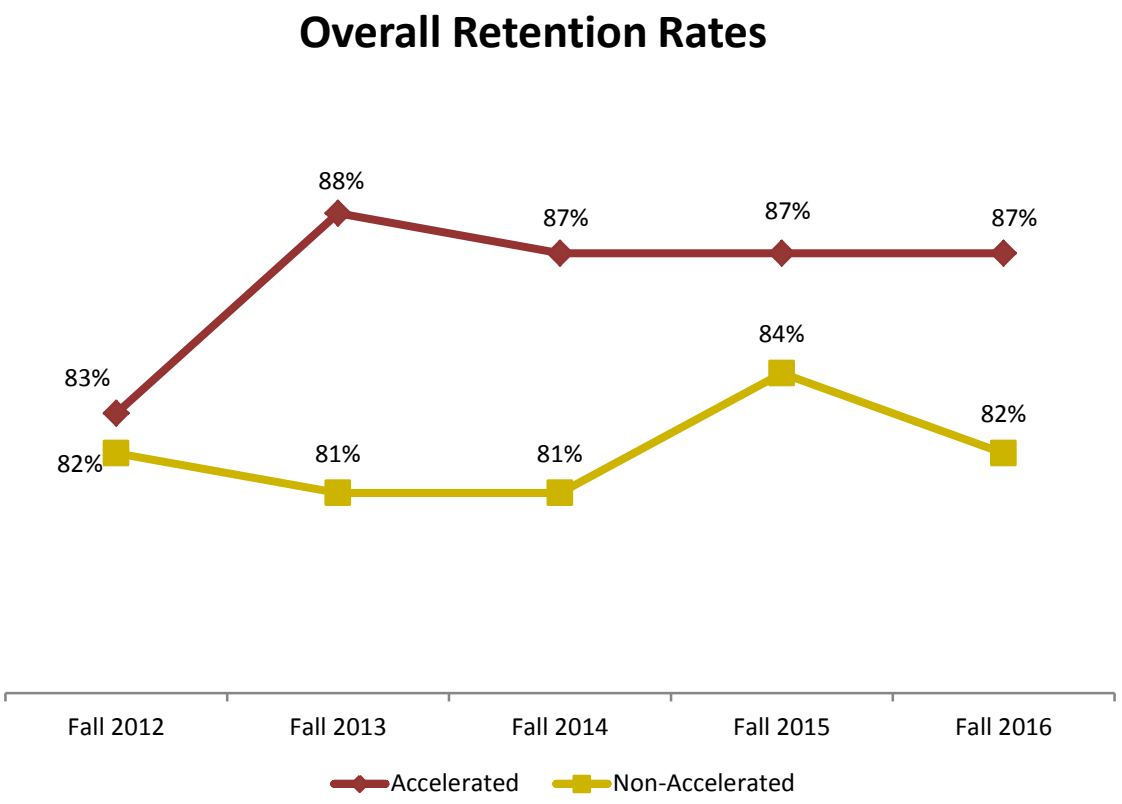
Spring Success Rates



- The 5-term average success rate of Spring cohort accelerated students was higher (64%) than non-accelerated math students (50%).
- The average success rate of Spring cohort students at the basic skill course level (Math 046) was slightly higher for accelerated math students compared to non-accelerated math students (53% & 51%, respectively).
- On average, the success rate of students at the associate math course level (Math 096) enrolled in accelerated math was also higher (68%) than non-accelerated math students (47%).

Source: SDCCD Information System

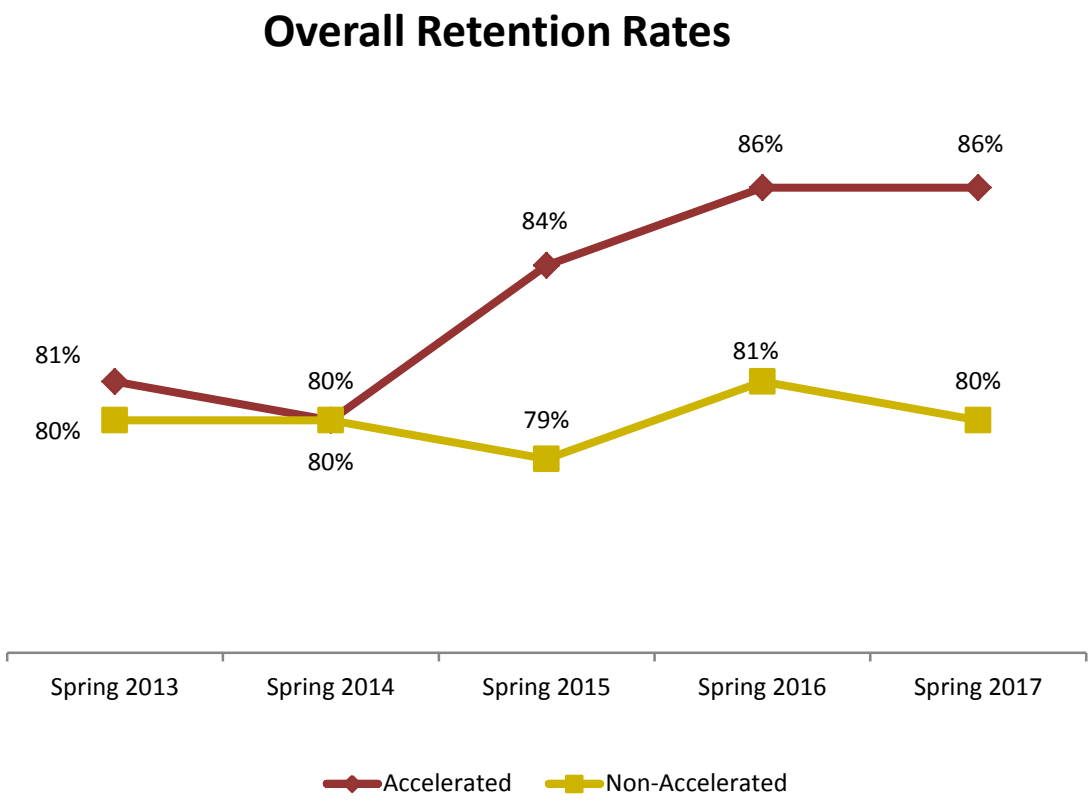
Fall Retention Rates



- The overall retention rates of the Fall accelerated math cohorts were higher (87%) when compared to retention rates of non-accelerated math cohorts (82%).
- The average retention rate of Fall cohort students at the basic skills course level (Math 046) was higher for accelerated math students (85%) compared to non-accelerated math students (82%).
- On average, the retention rate of students at the associate course level (Math 096) was higher for accelerated math students (90%) compared to non-accelerated math students (80%).

Source: SDCCD Information System

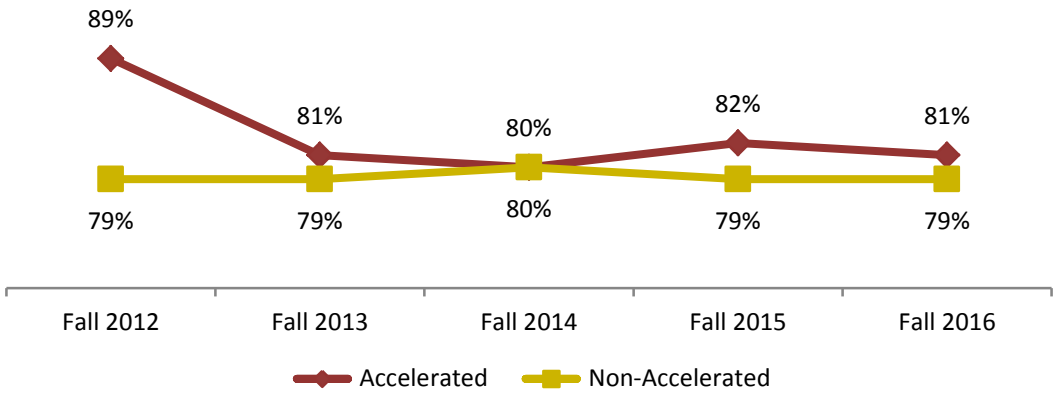
Spring Retention Rates



- The overall retention rates of Spring cohort accelerated students were higher (85%) than non-accelerated math students (80%).
- The average retention rates of Spring cohort students at the basic skills course level (Math 046) were comparable for accelerated and non-accelerated math students (80% & 81%, respectively).
- The average retention rate of students at the associate course level (Math 096) was higher for accelerated math students (86%) compared to non-accelerated math students (77%).

Source: SDCCD Information System

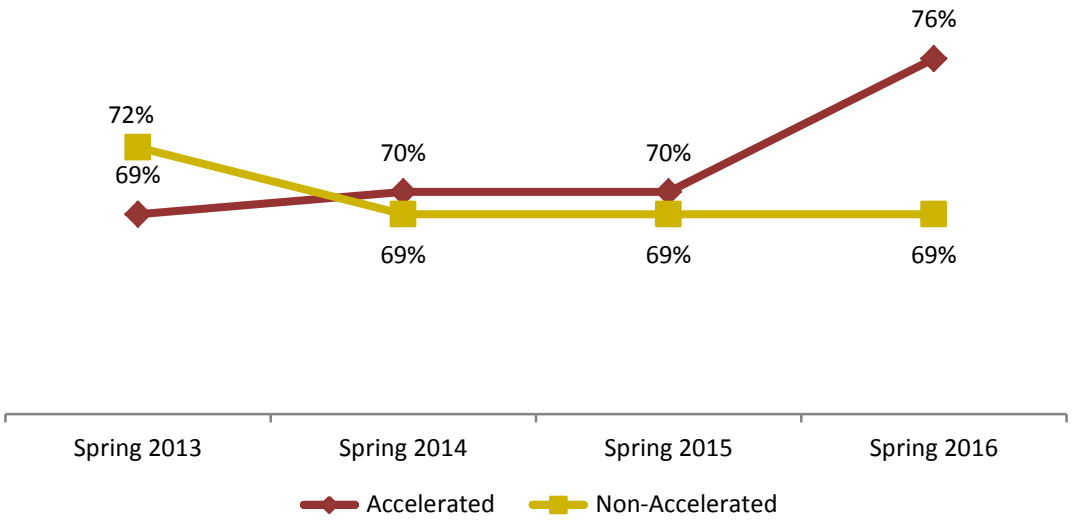
Fall Overall Term Persistence



- The overall Fall term persistence rates of accelerated math students were higher (82%) than non-accelerated math students (79%).
- The average term persistence rate of Fall cohort students at the basic skills course level (Math 046) was higher for accelerated math students compared to non-accelerated math students (84% & 78%, respectively).
- The average term persistence rate of Fall cohort students at the associate course level (Math 096) was lower for accelerated students (78%) than non-accelerated students (82%).

Source: SDCCD Information System

Spring Overall Term Persistence



- The overall term persistence rates of Spring accelerated students were slightly higher (72%) than non-accelerated math students (70%).
- The average term persistence rates of Spring cohort students at the basic skills course level (Math 046) were higher for accelerated math students compared to non-accelerated math students (74% & 71%, respectively).
- The average term persistence rate of Spring cohort students at the associate course level (Math 096) was lower for accelerated math students (69%) compared to non-accelerated math students (73%).

Source: SDCCD Information System

Subsequent Enrollment By Course Level: Fall 2012 – 2015

		MATH 046			MATH 096			Other Course Level			Overall Percent Enrolled Transfer Math
		Starting Cohort	Enrolled Transfer Math	Percent Enrolled Transfer Math	Starting Cohort	Enrolled Transfer Math	Percent Enrolled Transfer Math	Starting Cohort	Enrolled Transfer Math	Percent Enrolled Transfer Math	
Accelerated	Total/Avg	496	284	57%	189	89	47%	61	40	66%	55%
Non-Accelerated	Total/Avg	4,547	1,096	24%	4,430	2,608	59%	5,695	633	11%	30%

- Overall, a higher percentage of Fall accelerated math students subsequently enrolled in transfer level math than non-accelerated math students. The overall subsequent enrollment rate of Fall cohort students in transfer level math was 55% for accelerated students compared to 30% for non-accelerated students .

- On average, the subsequent enrollment rate in transfer level math for Fall cohort students who placed at the basic skills course level (Math 046) was higher for accelerated math students (57%) than non-accelerated math students (24%). However, the opposite trend was demonstrated for students at the associate math course level (Math 096). Subsequent enrollment rate in transfer level math for students who placed at the associate math course level was lower for accelerated math students (47%) compared to non-accelerated math students (59%).

Note. Subsequent enrollment is defined as the number of students who successfully complete MATH 046, 047A, 092 or 096 and then enroll in a transfer level MATH course within three terms. Cancelled classes are excluded.

Source: SDCCD Information System

Subsequent Enrollment By Course Level: Spring 2013 – 2016

		MATH 046			MATH 096			Other Course Level			Overall Percent Enrolled Transfer Math
		Starting Cohort	Enrolled Transfer Math	Percent Enrolled Transfer Math	Starting Cohort	Enrolled Transfer Math	Percent Enrolled Transfer Math	Starting Cohort	Enrolled Transfer Math	Percent Enrolled Transfer Math	
Accelerated	Total/Avg	430	204	47%	169	63	37%	37	15	41%	44%
Non-Accelerated	Total/Avg	3,888	965	25%	4,211	2,340	56%	4,704	501	11%	30%

- Overall, a higher percentage of Spring accelerated math students subsequently enrolled in transfer level math than non-accelerated math students. The average subsequent enrollment rate of Spring cohort students in transfer level math was 44% for accelerated math students compared to 30% for non-accelerated math students.

- Spring cohort subsequent enrollment rates in transfer level math, on average, for students at the basic skill course level (Math 046) was higher for accelerated math students (47%) compared to non-accelerated math students (25%). The opposite trend was seen at the associate math course level (Math 096). On average, 37% of accelerated math students at the associate math course level enrolled in transfer level math compared to 56% for non-accelerated math students.

Note. Subsequent enrollment is defined as the number of students who successfully complete MATH 046, 047A, 092 or 096 and then enroll in a transfer level MATH course within three terms. Cancelled classes are excluded.

Source: SDCCD Information System

Subsequent Success by Course Level: Fall 2012 – 2015

		MATH 046				MATH 096				Other Course Level				Overall Success Rate
		Starting Cohort	Enrolled Transfer Math	Success Counts	Success Rate	Starting Cohort	Enrolled Transfer Math	Success Counts	Success Rate	Starting Cohort	Enrolled Transfer Math	Success Counts	Success Rate	
Accelerated	Total/Avg	496	284	167	59%	189	89	53	60%	61	40	23	58%	59%
Non-Accelerated	Total/Avg	4,547	1,096	705	64%	4,430	2,608	1,467	56%	5,695	633	386	61%	59%

- Overall, Fall accelerated math students successfully completed a transfer level math course at the same rate as non-accelerated math students (59% each).
- On average, the transfer level math subsequent success rate of Fall cohort students at the basic skills course level (Math 046) was lower for accelerated math students (59%) compared to non-accelerated math students (64%). The average transfer level math subsequent success rates of students at associate course level (Math 096) was higher for accelerated math students (60%) compared to non-accelerated math students (56%).

Note. Subsequent success is defined as the number of students who successfully complete MATH 046, 047A, 092 or 096 with a grade of A, B, C or P, subsequently enroll in transfer level MATH within three terms, and complete a transfer level math course successfully with a grade of A, B, C or P.

Source: SDCCD Information System

Subsequent Success by Course Level: Spring 2013 – 2016

		MATH 046				MATH 096				Other Course Level				Overall Success Rate
		Starting Cohort	Enrolled Transfer Math	Success Counts	Success Rate	Starting Cohort	Enrolled Transfer Math	Success Counts	Success Rate	Starting Cohort	Enrolled Transfer Math	Success Counts	Success Rate	
Accelerated	Total/Avg	430	204	123	60%	169	63	32	51%	37	15	8	53%	58%
Non-Accelerated	Total/Avg	3,888	965	589	61%	4,211	2,340	1,377	59%	4,704	501	299	60%	60%

- Overall, a slightly lower percentage of Spring accelerated math students successfully completed a transfer level math course compared to non-accelerated math students. The overall subsequent success rate of Spring cohort students was lower for accelerated math students (58%) compared to non-accelerated students (60%).

- On average, the transfer level math subsequent success rate of Spring cohort students who placed at the basic skills course level (Math 046) were comparable for accelerated and non-accelerated math students (60% & 61%, respectively). The average transfer level math success rate of students who placed at associate math course level (Math 096) was lower for accelerated math students (51%) compared to non-accelerated math students (59%).

Note. Subsequent success is defined as the number of students who successfully complete MATH 046, 047A, 092 or 096 with a grade of A, B, C or P, subsequently enroll in transfer level MATH within three terms, and complete a transfer level math course successfully with a grade of A, B, C or P.

Source: SDCCD Information System