

Executive Summary of Math Path Evaluation Results from Spring 2007

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Introduction

Math Path is a program offered at Pasadena City College that condenses two math transfer requirements, Math 125 and Math 131, into one semester. Prior to Math Path these courses were each semester-long. Math Path was first offered in the Fall 2006 semester and then re-offered in the Spring 2007 semester. This evaluation collected data on the Spring 2007 semester and aimed to answer four key questions.

1. To what extent does the structure and delivery of Math Path contribute (or impede) students' learning?
2. What factors contribute to students' success (or lack of success) in Math Path?
3. How well do students demonstrate understanding the math content taught within Math Path?
4. How do students who enroll in Math Path differ from other PCC students who are not enrolled in Math Path?

Data Collection Methods

Five data collection methods were utilized in the evaluation. These methods included a student survey, student journals, a student focus group, teacher logs and student grades. The student survey was administered to the Math Path students at the start, midpoint and end of the semester. Ms. Carrie Mortensen's standard Math 125 class was identified as a control group and surveyed at the start and end of the semester. Four student journals were assigned periodically throughout the semester and students were asked to participate in a focus group at the end of Math Path. Mr. Jay Cho and Ms. Mortensen completed weekly teacher logs as well as tracked and reported the students' grades and ALEKS assessments.

Student Demographics (based on initial enrollment)

- 70.8% female; 41.2% male
- 54.2% Latino; 16.7% White; 16.7% Asian; 8.3% Other; 4.2% not reported
- 62.5% native English speakers; 33.3% non-native English speakers; 4.2% not reported
- 80% of the students reported enrolling in Math Path to finish two classes in one semester.

Results

Students are satisfied with Math Path and recommend it to other students.

- All students recommended Math Path to future students.
- 87% of the Math Path students stated they would enroll in Math Path 2 if needed to meet requirements.

There are many elements of Math Path that students felt contributed to learning.

- Resources available, (e.g., in-class tutors, TLC center, MESA tutors), were helpful in students' success.

- Structure of the academic day assisted learning when started with lecture in the morning followed by a supplemental skills session devoted to breaking down the material covered during lecture.
- Student comradery was critical to success in Math Path and was built through camping trips and on-campus hours.
- ALEKS assisted learning when program aligned with current course curricula.

There are elements of Math Path students felt impeded, or did not maximize, learning.

- Camping trips did not provide learning opportunities that expanded upon classroom material.
- Success session deemed an unnecessary use of time.
- Students struggled to understand usefulness of ALEKS when content was not aligned with current course curricula.
- Students' attendance and tardiness rates worsened as the semester progressed.

Students who complete Math Path are different from students who take the standard Math 125 course.

- Students' survey scores increased from the start to the end of the semester in time spent studying for tests, view of self as capable of succeeding in math, and sense of connection to the Math Path community. Students' survey scores dropped in completing non-graded assignments.
- Math Path and control group students were comparable at start of semester except control group thought the teacher explained concepts more clearly. At the conclusion of the semester, Math Path students scored higher in studying for tests, view of self as capable of succeeding in math, and pursuing a math/science based degree.
- Of the students who listed intended Fall 2007 courses, 100% of Math Path students plan on taking a math based course (e.g., statistics, chemistry, accounting, etc.) compared to 76% in the control group.

There is a relationship between success in the course and success on ALEKS.

- Students who scored well on ALEKS scored well on tests and final exams.
- There were small but non-significant relationships between hours spent on ALEKS and performance on ALEKS assessments.
- Students who did not pass Math 125 scored lower on the pre-semester and mid-semester ALEKS assessments. Students who did not pass Math 131 scored lower on the mid-semester and final ALEKS assessments.

Recommendations

Based on the data, I recommend the following:

- Develop an attendance and tardiness policy or incentive program.
- Orchestrate a transition between Math 125 and Math 131 to prepare students for increased workload (perhaps utilizing the second camping trip).
- Extend the duration of the Math 131 segment and shorten Math 125.
- Camping trips
 - Expand to connect with the classroom material before, during, and after the trip.
 - Provide camping trip leads with faculty development in mentoring.
- ALEKS
 - Reduce requirements prior to tests.
 - Allow students access to current material prior to tests.

- Reduce weight in final grade.
- Clearly state purpose and advantage of using ALEKS.
- Success Session
 - Move success session from Friday to another day of the week.
 - Devote supplemental skills session to material breakdown and move all other development activities to success session.
 - Host speakers from math-based fields.
 - Clearly state purpose and advantage of participating in success session.
- Alert and educate PCC advising staff of the Math Path program.