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AB705 Trigonometry with Support Student Experience Survey Fall 2019

College of the Canyons

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Institutional Research, Planning, and
Institutional Effectiveness

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Introduction

At the request of the Math department, the office of Institutional Research, Planning and Institutional Effectiveness conducted survey research as part of the evaluation of the impact of AB705 implementation.

In fall 2019, the Math department began offering transfer-level Math courses with an additional, co-requisite support component in light of AB705¹. One of these courses was the entry level STEM course, Trigonometry with support (MATH-102/092). The first cohort of students enrolled in the newly-offered transfer-level course were surveyed. The purpose of the survey was to assess student experiences as they relate to their perception of the rigor, why they elected to enroll in the course (as opposed to others that they had access to), and whether they were knowledgeable about the different Math pathways. The research questions guiding the analyses included:

- Who are the students enrolling in Trigonometry with support with regard to major, first-time/high school?
- What are student perceptions of the course (preparedness/rigor)?
- What resources did students use to help with the course?

Method

Paper surveys were distributed in class toward the end of the fall 2019 semester. The surveys did not include questions asking for personally identifying information, and responses could not be connected to a students' course performance or institutional data.

A total of six sections of Trigonometry with-support were identified for the term with a total enrollment of 160 students who had registered for the course. Survey responses were received from 67 students in total yielding a 42% response rate.

Research Results

Student Profile

Most students surveyed reported being New/first-time students at COC (55%), followed by those who were continuing students defined as two or more semesters (42%) and the rest indicating they were high school students.

Students were asked to indicate the type of Math course that they were last in, and 50% reported that their last course was in high school and that MATH-102/092 was their first college-level Math course. The next most common course was MATH-070, Intermediate Algebra. Those who reported being continuing students reported that their last Math course was MATH-070 and those who were first-time indicated their last course was in High school.

Table 1. Last Math course Reported by Student Type (Number of Students)

Student Type	Total	Last Math class was in High School	Math-060, Elem. Algebra	Math-075, Interm. Algebra for Statistics	Math-070, Interm. Algebra	Math-083, Geometry	Math-140, Intro to Statistics	Don't know/ Other
New/First-time student	36	31	0	0	1	0	0	4
Continuing student	28	2	1	2	12	5	5	1
High School student	2	1	0	0	0	0	1	0

¹ AB 705 is a bill signed by the Governor on October 13, 2017 that took effect on January 1, 2018. The bill requires that a community college district or college maximize the probability that a student will enter and complete transfer-level coursework in English and math within a one year timeframe.

With regard to the program of study that students in Trigonometry are pursuing, most students selected a major in STEM fields, with Biological Sciences, and Computer Science being the most common, followed by Engineering. Table 2 provides the distribution of additional majors selected.

Table 2. Major or Program of Study

Major	N
Biological Sciences	17
Computer Science	17
Engineering	12
Business Administration	4
Architecture	2
Kinesiology	2
Mathematics	2
Automotive Technology	1
Construction Management Technology	1
Environmental Studies	1
Physics	1
Undecided	1
<i>Other, specify</i>	
<i>Pre-Med</i>	1
<i>Health science</i>	1
<i>Economics</i>	1
<i>Chemistry</i>	1
<i>Anthropology</i>	1

Student Awareness and Perceptions

Students answered questions surrounding the topic of awareness of varying Math courses based on major and whether they indicated being given options for types of Math courses to enroll in. Majority of respondents indicated that they were aware that Math courses vary (87%).

In terms of their perception of being given multiple options for Math courses either through the placement or by a counselor, 48% indicated that they did receive options, and 52% indicated that they either ‘did not’ or that they were ‘not sure’.

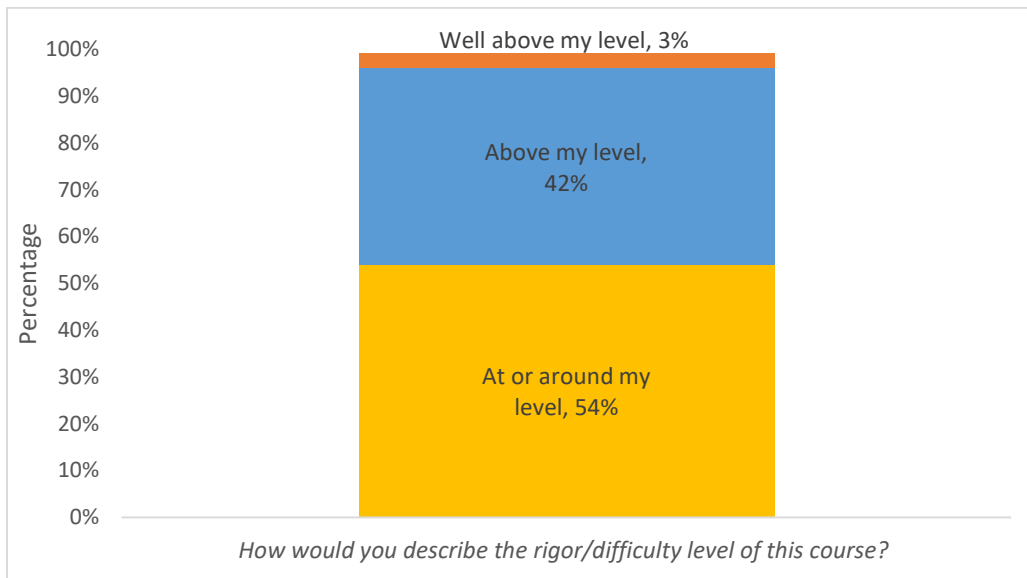
Most students reported that the main reason they enrolled in the course was that it was a requirement for their major (77%).

Table 3. Main Reason for Enrolling in Course

Reason for Course Enrollment	N
It’s a requirement for my major/degree	51
It’s a requirement for my Transfer institution	4
Was advised to by Counselor/Adviser	3
It was an option on my placement result.	5
Other, please explain	-
<i>Was told I could not enroll in my class I wanted and got put into here</i>	1
<i>Major change</i>	1
<i>I did not want this class, I got forced in</i>	1

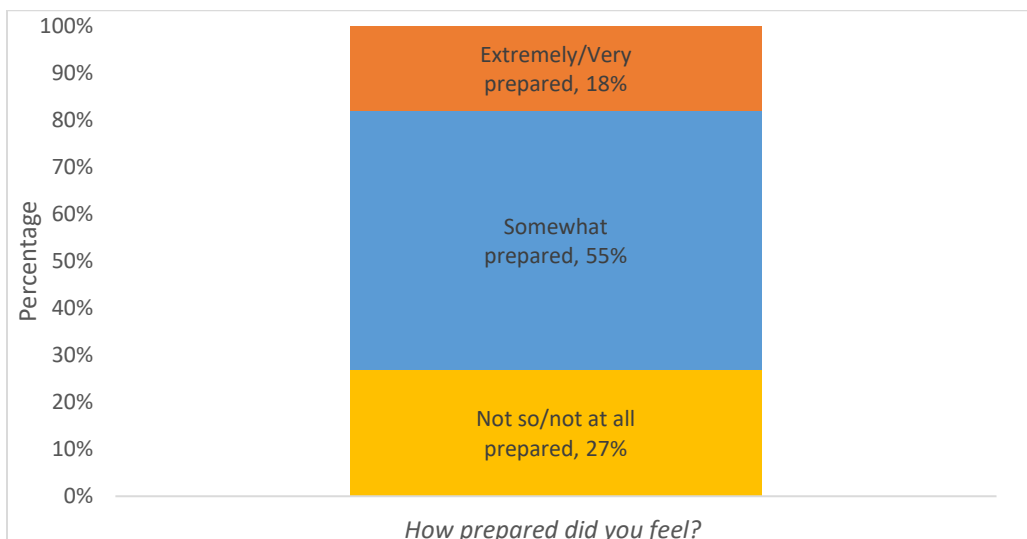
Students' perceptions of the rigor/difficulty level of the course were that it was a course 'at or around my level' (55%) followed closely by 'above my level' (42%).

Figure 1. Student Perceptions of Rigor Level of Course



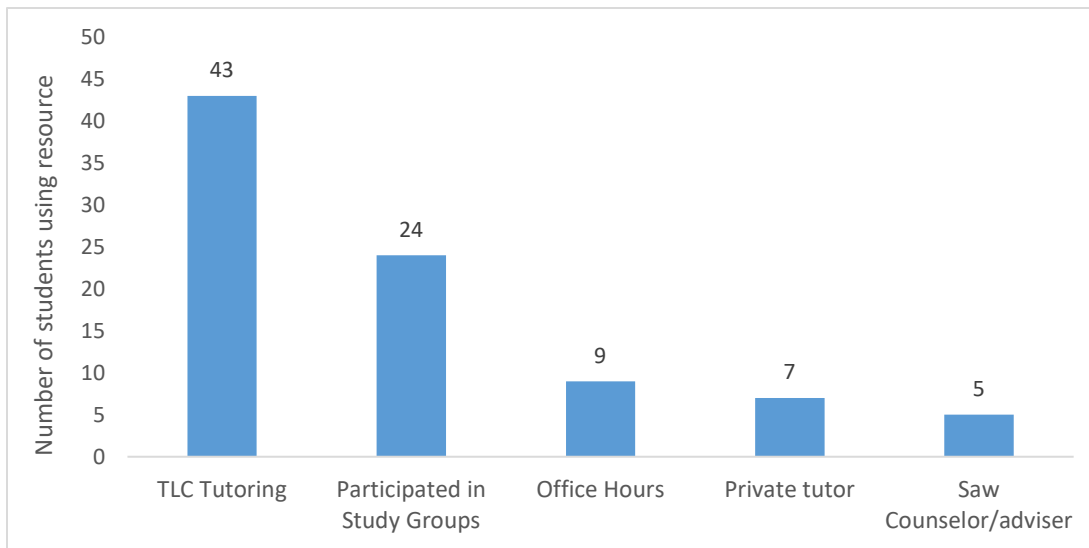
With regard to their preparedness for the course, over half of the students indicated that they felt they were 'somewhat prepared' (55%). Others reported that they were 'not so prepared/not at all prepared' (27%), and 18% indicated that they were 'extremely/very prepared'.

Figure 2. Student Perceptions of Preparedness for Course



The most common resource used to help students with the course was tutoring at the TLC (43 students) and the least common was seeing a counselor (5 students).

Figure 3. Resources Used to Help with Course



Comments

In an open-ended question, students were asked to write in suggestions/comments/questions about the course. A total of 33 students provided a response. The following are sample quotes from the responses provided once they were coded under broader common themes of suggestions, positive and negative assessments of co-requisite course, and course rigor. All open-ended responses are provided in Appendix A.

Suggestions

Among students who made suggestions, the most common type was related to the length of the course. Other suggestions were related to the suggested use of formula sheets for tests and ‘more book learning’. Two students suggested that the support component should be used toward homework and review and one student suggested a pre-102 class to help them prepare.

- “I believe the course needs to meet four times a week to allow shorter class sessions. I believe this would allow for students to be able to pay better attention.”
- “Class can be too long but if broken down into 3 days & shorter classes, students might focus more.”
- “092 has been helpful but not enough. Maybe it should be a homework help class.”

Positive Assessments of Co-requisite support

Students also commented on the with-support component of the course with some indicating that it was helpful and others feeling like it was not beneficial to their experience in the course.

- “While the 092 portion was ultimately helpful, it was often exhausting when in lecture for an extended period of time and led to a lack of motivation at times.”
- “The class is challenging, but the professor gives us the tools to succeed. The 092 course definitely helps.”
- “I really like the support class because it allows for extra time in class to learn the material, but even with it I sometimes feel that we’re running short on time.”

Negative Assessments of Co-requisite support

- “The support class ends up being more 102 instead of support.”

- “I probably wouldn't do that 092 course again because it didn't really help but then again I didn't really have trouble with the class.”
- “Having taken Math 70 in the summer helped a great deal with Math 102. I feel Math 92 alone would have not helped as much.”
- “Offer this class without the useless support class that I am forced to waste my time in every week.”

Course Rigor

Another common theme among responses was related to the difficulty level of the course. Twelve students indicated that the course content was difficult and the material was hard to keep up with. One student made the observation that many students had dropped the course.

- “It has lots of information that's difficult to take in all at once.”
- “The class is long (maybe too long) and is very hard to keep up. The material is very difficult and is frustrating that I have to take it just to take another completely different math class.”
- A lot of students dropped this class. I don't know if that is normal in this school.

Recommendations

Upon review of the results of the student survey in AB705 Trigonometry with support, the following recommendation should be taken into consideration:

- Explore options for addressing the length of the course.
- Explore options for structuring the with support (MATH-092) component more uniformly as students presented varying perspectives in its helpfulness.

For more detailed information on this research brief, stop by the Institutional Research, Planning, and Institutional Effectiveness office located in BONH-224, or contact Preeta Saxena, Senior Research Analyst at 661.362.3072, or Daylene Meuschke, Associate V.P. Institutional Research, Planning and Institutional Effectiveness at 661.362.5329.

Survey Instrument available upon request.

Appendix A

Open Ended Responses
The class is challenging, but the professor gives us the tools to succeed. The 092 course definitely helps
Somehow allow formula sheets on test. There are so many formulas to memorize, and it makes it harder if you're taking multiple classes.
This class is fair and allows you to understand the topics being introduced.
There is a lot of material to cover per test.
The class is long (maybe too long) and is very hard to keep up. The material is very difficult and is frustrating that I have to take it just to take another completely different math class.
It's fun and engaging but it feels rushed and we get very little hour to ask personal questions and tackle the problems ourselves
It's hard, but I could do better.
It is not impossible, however it is pretty difficult.
It has lots of information that's difficult to take in all at once
I believe this course is challenging. However, I knew what I was signing up for. This class helps me eliminate 2 years of math in just one semester. I accepted the challenge and believe the class was fair.
Although this course was above my level, I could've tried a lot hard then passed without flaw. But I didn't, I neglected my responsibility as a student and not only failed my Professor, but also failed myself as an individual and a citizen of the US
A lot of students dropped this class. I don't know if that is normal in this school.
The 092 class allowed us to extend class to be able to keep up with the 102 schedule & work. It has been difficult to keep up with the homework. The class is only 3 credits for 102 but requires way more work to keep up and understand. Would it be possible to have a Pre-102 class to help prepare for the 102 class? 092 has been helpful but not enough. Maybe it should be a homework help class.
I think the time allowed for /92 should be dedicated to homework or review of the lesson previously taught, so we have the best possible (?) to help us if we did not understand. (our teacher)
I believe the course needs to meet four times a week to allow shorter class sessions. I believe this would allow for students to be able to pay better attention. The support class ends up being more 102 instead of support.
While the 092 portion was ultimately helpful, it was often exhausting when in lecture for an extended period of time and left to a lack of motivation at times.
Offer this class without the useless support class that I am forced to waste my time in every week.
I really like the support class because it allows for extra time in class to learn the material, but even with it I sometimes feel that we're running short on time.
I probably wouldn't do that 092 course again because it didn't really help but then again I didn't really have trouble with the class.
Having taken Math 70 in the summer helped a great deal with Math 102. I feel Math 92 alone would have not helped as much.
I think we need more book learning
Everything was fine but maybe make the class shorter
Class can be too long but if broken down into 3 days & shorter classes, students might focus more.
3 hours & 30 minutes is a long time
Y'all do good
Very hard but fun
The placement of math levels demotivated me to try in this class because I didn't care to relearn anything which made me feel upset in my placement and class. One of the best teachers I have had taught the class but I felt unmotivated
Similar to pre-calculus jut more geometric.
It was very useful.
I like the speed of this course
I have learned so much in this course.
Alright