RUNNING HEAD: MATH PREPARATION

High School Math Preparation for Students Taking Math Remedial Courses in Post-secondary Institutions

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Abstract

The present study explores the high school math preparation of students from an urban school district who enrolled at public postsecondary institutions in Minnesota in fall 1998 or fall 1999 and took remedial math courses. Findings showed that most of the students taking remedial classes at the 2-year community/technical colleges were not "on track" in their high-school math course-taking schedule. Majority of students who took remedial courses at the 4-year postsecondary institutions had taken high-level math courses, but they still needed to repeat the same level or start at even a lower level math course in college. Positively, better math preparation helped students in postsecondary remedial programs to pass remedial courses. Approaches for high schools and postsecondary institutions might take to help prepare students during pre-college math and to reduce the need for remediation were suggested.

High School Math Preparation for Students Taking Math Remedial Courses in Post-secondary Institutions

As state budgets shrink and school accountability becomes an integral part of K-16 education, the financial costs of students taking remedial classes in post-secondary institutions has become a “hot button” issue. Policy makers and educators have been questioning why so many high school graduates seem to be lacking basic academic skills. Based upon the remedies that have been suggested, it appears that many seem to think that high schools are responsible. The assumption is that students are taking remedial courses because their high schools have failed to educate them effectively. Following that logic, one proposed solution is to provide a rigorous college preparatory curriculum for every American high school student (Viadero, *Education Week*, October 10, 2001), with the expectation that the need for remediation would diminish.

An important question about the adequacy of high school education is whether or not students needing remediation are ones who failed to take college preparatory classes during high school. There is an assumption that students who take college preparatory courses in high school should not need to take remedial courses in college (Southern Region Education Board, 1997; Merisotis & Phipps, 2000), for those courses should be providing the knowledge prerequisite to taking college level classes. A study by Maryland Higher Education Commission (1998) was consistent with this assumption. The Commission found that students who had not completed college preparatory courses were more likely to take remedial courses. In addition, the study showed that students who completed college preparatory courses were more likely to succeed in college. This thinking and research supports recent efforts of many four-year post-secondary institutions to increase college preparation requirements, requiring four years of mathematics and four years of English in high school, as well as recent efforts by K-12 schools to get more of their students into college preparatory classes.

Prior to the movement in preK-12 education to standards and accountability, over time the proportion of college students needing remedial coursework stayed consistent. For example, a survey by the National Center for Education Statistics (1996) found a slight decrease (1%) from 1989 to 1995 in the total percentage of freshmen who needed to enroll in remedial classes in at least one subject. In contrast to the overall trends, between 1989 and 1995 the freshmen who enrolled in remedial math classes increased by 3% (21% to 24%). The large numbers of students needing remediation in math is not new; for example, in 1984 Lappan and Phillips (1984) pointed out that there were large numbers of college freshmen under-prepared in math before entering college. At the same time, given the importance of math skills in an information age, it is bothersome to see the proportion of students needing remediation increasing.

Recently, studies in Utah have investigated the relationship between high school math preparation and the need for college remediation (Hoyt, 1999; Hoyt & Sorensen, 2001). These studies provide a contrast to the findings reported earlier in this paper. Hoyt (1999) found that a large percentage of graduates who completed advanced level math courses still needed to take remedial courses in college. A follow-up study by Hoyt and Sorensen (2001) also found that over half of the students who successfully completed college preparatory math courses still were placed in college remedial courses. They also focused on the high schools, arguing that the high schools not only need to require students to complete math courses, but also to make sure they attain mastery of the content.

The main purpose of this paper is to examine in detail the experiences of students who are taking remedial classes in mathematics. Specifically, it explores the high school math preparation of students from an urban school district who enrolled at public postsecondary institutions in Minnesota in fall 1998 or fall 1999 and took remedial math courses. First, the present paper depicts the college preparation in math for these students. Then it examines the relationship between the college math preparation and number of remedial math courses taken, remedial placement, and outcomes of remediation. The findings suggest approaches that high schools and postsecondary institutions might take to help prepare students during pre-college math and to reduce the need for remediation.

Method/Data Sources

Information on students from the urban school district was made available on two data files listing students who took math remedial courses in post-secondary institutions. Both files contained information about which remedial math courses students took at their postsecondary institutions, the number of remedial math courses they took, and the grades they received for those remedial math courses. The first file included information on 63 students graduating in spring, 1999, and who enrolled at the University of Minnesota.[1] The second file included 149 and 133 students who enrolled at campuses of the Minnesota State Colleges and Universities (MNSCU) System in 1998 and 1999,

[1] The Minnesota legislature in 2000 requested information from post-secondary institutions about 1998 and 1999 graduates. The University switched to the People Soft data system in 1999. That switch made it very difficult to retrieve information about 1998 graduates. Because the 1999 group taking remedial classes looked similar to a group from an earlier report on 1995 graduates, 1998 information was not collected.

respectively. For the former year, 14 enrolled in state universities, 72 enrolled in the Community College A, and 63 enrolled in other community and technical colleges. For the latter year, 13 enrolled in the state universities, 62 enrolled in the Community College A, and 58 enrolled in other community and technical colleges. Because so many students enrolled at Community College A, it was analyzed as a separate category. Since state universities had only small number of students in our sample, they were included in the analyses but their results will not be reported.

The two files were combined and then merged with a file containing information about the math courses taken by each student from eighth grade through their senior year, and the grade students received for each course. From this math enrollment record, several indicators of math preparation were constructed. The first indicator was a dummy variable to identify whether the student was "on track" (coded 1) or not (coded 0). To be on-track, a student must take certain math courses at particular grades. Although an ideal sequence would be taking introductory algebra (at 8th grade), geometry (at 9th grade), advanced algebra (at 10th grade), pre-calculus (at 11th grade), and calculus (at 12th grade), the more common benchmark is to take Algebra no later than 9th grade. That sequence would have Geometry and Algebra 2 be taken in grades 10 and 11 (their order may vary), and pre-calculus or calculus in 12th grade. We labeled as "on track" students who took the first three of the college preparatory classes, Algebra 1, Geometry, and Algebra 2 at appropriate times, rather than forcing them to take pre-calculus or calculus classes as well to be labeled "on track." The second indicator is the highest-level math course completed in high school for each student. We categorized the highest-level math courses completed in the order of (1) Basic Math, (2) Algebra 1, (3) Geometry, (4) Algebra 2, and

(5) Pre-Calculus or above. Since the number of cases in some of the categories was so small after controlling for the type of post-secondary institutions, a dummy variable was generated to differentiate students who completed more than Algebra 1 (coded 1) from those who took only Algebra 1 or Basic Math courses (coded 0) in high school. This indicator allowed us to examine how many of the students taking remedial classes had taken advanced math classes. If most of them took advanced math course(s), but still took remedial courses, the findings would support the view that there is poor alignment between high school and post-secondary institutions' standards. Finally, the third indicator was a dichotomous variable that indicated students who took math course(s) at 12th grade (coded 1), distinguishing them from students who did not take any math course at 12th grade (coded 0). This indicator provided us evidence on whether lack of retention of math knowledge is one of the factors affecting whether or not students need to take remedial math courses.

The dependent variables included the number of remedial math courses taken by each student, the remedial placement or level of the remedial classes where the student began, and the proportion of remedial math courses passed. In order to avoid problems with skew, the number of remedial math courses taken was divided into two categories, the first with students who took only one remedial course (coded 0), the second containing those who enrolled in more than one remedial course. Remediation placement is a discrete variable that indicates the placement of the first remedial math course in the postsecondary institutions for each student. There were three categories: (1) Fundamental Math, (2) Algebra, and (3) Intermediate Algebra. The last dependent variable is the proportion of remedial math courses passed. Consistent with work cited earlier, expectations were that students in the remedial programs who had better math preparation in high school should take fewer math remedial courses, be placed in relatively advanced level remedial math courses, and have a higher rate of passing remedial courses.

Findings

High School Math Preparation

Table 1 summarizes the percentage distribution of students for each of the high school math preparation indicators across post-secondary institutions. The findings can be summarized as follows:

Insert Table 1 about here
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(1) Math Course-taking Track

For students taking remedial math courses in college, analyses showed that about 60% of students in 1998 and 54% of students in 1999 were **NOT** on track. There were several scenarios for students not on track. Some of them took their first algebra class later than 9th grade. Some of them took algebra by 9th grade, but did not follow up their algebra classes by taking geometry or advanced algebra by 10th grade. Some of them took algebra by 9th grade, but only followed that class by taking either geometry or advanced algebra at 10th grade. Overall, more than 50% of the students in the sample were off-track, which explains in part why they needed to take postsecondary math remedial courses.

Results also indicate an association between being on track in high school math course-taking and type of postsecondary institutions for 1998 graduates ($\chi^2(2) = 13.82$,

$p < .001$). Although interpretation should be tempered by the small sample size in the State University group, those students were more likely to be on-track than students at 2-year postsecondary institutions (Community College A, other community/technical colleges). In 1998, about 86% of students enrolled at state universities were on-track, compared with only 40% and 32 of students in Community College A and other community/technical colleges, respectively. In 1999, the University of Minnesota had the highest percentage of on-track students (62%), followed by Community College A (40%), and then other community/technical colleges (32%).

(2) Highest-Level Math Course Completed

A modest majority of students in remedial programs reached the Algebra 2 level (overall 51% in 1998 & 54% in 1999). About 23% in 1998 and 15% in 1999 of all students completed only Algebra 1 or basic math courses. About 14% of students stopped at Geometry for both years. Surprisingly, overall about 12% and 16% of students in 1998 and 1999 who took remedial math courses previously completed math courses above Algebra 2 level. There was a significant association between highest level math completed and type of post-secondary institutions for both years (χ^2 (8) = 16.6, $p<.05$ for 1998 graduates; χ^2 (12) = 44.8, $p<.01$ for 1999 graduates). About thirty percent of students who took remedial math courses in community/technical colleges other than Community College A in both years had only completed Algebra 1 or basic math courses. For Community College A, about 20% in 1998 and 15% in 1999 of the students who took remedial math courses had only completed Algebra 1 or basic math courses. The proportion of students at the University of Minnesota who had finished courses at Algebra 1 or basic math levels was only 2%.

With respect to high course attainment, the numbers were as follows: About sixty percent of students who took remedial math courses in Community College A previously completed Algebra 2 or above in high school. Between 40% and 50% of students in other community/technical colleges had completed Algebra 2 or above during high school. In contrast, all the students in 1998 and eighty percent of students in 1999 at the state universities had completed Algebra 2 or above. A substantial proportion completed exactly through Algebra 2 (36% in 1998 & 46% in 1999). For students who enrolled at the University of Minnesota, about ninety percent completed Algebra 2 or higher-level math courses during high school.

In summary, more students at the 2-year postsecondary institutions had only Algebra I or basic math skills, so it does not seem surprising to find that they were under-prepared and needed to take remedial math courses. In contrast, a substantial percentage of students in the 4-year postsecondary institutions had completed more advanced math courses in high school, but still needed to take remedial math courses.

(3) Took Math at 12th Grade

In both 1998 and 1999, fewer than half of students taking remedial classes at MNSCU institutions had took a math course at 12th grade. Fewer than half of the students in Community College A (46%) or other community/technical colleges (37%) took math at 12th grade in 1998, and only 21% of students who took remedial courses in state universities had math at 12th grade. In 1999, although there was no significant association between taking math at 12th grade and type of postsecondary institutions, there were differences between students in the University of Minnesota and students at the MNSCU institutions. About 65% of the students who took remedial math courses at the University of Minnesota had taken math at 12th grade, and less than half of the students in Community College A and other community/technical colleges took math courses at 12th grade. Overall, although many of the students did not take any math class their senior year of high school, a number of students who had math courses during their senior year still needed to take remedial classes. Supplementary analyses show that majority of these students took an advanced math class (Geometry, Algebra 2 or above) at 12th grade.

High School Math Preparation and Number of Remedial Courses Taken

Table 2 reports the relationship between each of the high school math preparation indicators and the number of remedial courses taken for students in each type of postsecondary institution. No association was found between high school math preparation and the number of remedial courses taken within each type of postsecondary institution. Further, whether or not students in the remedial programs took advanced math courses during high school as well as whether or not they took any math course during their senior year were not significantly related to how many remedial math courses they took. A non-significant trend was for on-track students to be more likely to take only a single remedial course when compared to students not on track. For both 1998 and 1999, 30% to 40% of the students from the other community/technical colleges who had completed geometry or above math courses still needed to take more than one remedial math course. And surprisingly, at Community College A and the University of Minnesota, a high percentage of students who had math at 12th grade took more than one remedial course.

Insert Table 2 about here

Stepwise regression analyses predicting the number of college remedial courses taken (continuous) by the three math preparation indicators, demographic variables (gender, ethnicity, limited English proficiency, socio-economic status), and three dummies for type of college/university (state universities as the reference) were run separately for 1998 and 1999.[2] These analyses examined how well these variables would predict the number of college remedial courses taken. For 1998 MNSCU students, there was no significant predictor. For 1999, only minority or not ($\beta = .08$, $p<.01$) was significant, and it accounted for very little of the variability in number of remedial course taken.

<u>High School Math Preparation and Remedial Placement</u>

Table 3 summarizes the association between high school math preparation and remedial placement across post-secondary institutions. As expected, on-track students were relatively less likely to be placed into remedial courses for Fundamental Math or Algebra (except students in the state universities in 1998) compared to off-track students. Significant associations were found for students enrolled in the Community College A in 1998 ($\chi^2(2) = 25.1$, $p<.01$), and students at the University of Minnesota in 1999 ($\chi^2(2) = 6.7$, $p<.05$). On the other hand, about 60% and 40% of students in other community/technical colleges were placed into remedial courses for Fundamental Math even when they had been on track. Students who completed advanced math courses in high school were more likely to take remedial courses on Intermediate Algebra in postsecondary institutions, while students who only completed basic math or Algebra 1 were more likely to take remedial courses on Fundamental Math and Algebra. There was a significant association between highest-level math course completed and remedial placement for students enrolled in Community College A in 1998 ($\chi^2(2) = 13.4$, $p<.05$). Finally, there was no significant relationship between taking math at 12th grade and remedial placement within each type of postsecondary institutions. Students who took math at the senior year did not differ in remedial placement from students who did not.

Insert Table 3 about here

Math Preparation and Proportion of Remedial Math Courses Passed

Table 4 shows the relationship between math preparation and the proportion of remedial math courses passed. It was found that on-track students passed a higher proportion of remedial math courses than off-track students, except at state universities. Students who completed Geometry or above at high school had a higher proportion of passing remedial courses than students who only completed Basic Math or Algebra 1 (state universities and the University of Minnesota were ignored for this comparison due to their small numbers of students who had completed only Algebra 1 or Basic Math). Finally, in 1998, students who took math courses in their senior year had a higher passing rate in remedial math courses than students who did not take math in 12th grade (except state universities). In 1999, opposite results were found; students who did not take math in their senior year had a higher passing rate in remedial math courses than students who took math in 12th grade (except state universities).

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[2] For 1998 stepwise regression analyses, there was no subject for the University of Minnesota and no information about the socio-economic status of students. These two indicators were included as predictors

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Insert Table 4 about here

Using the same array of variables as predictors, logistic regression and stepwise regression analyses were conducted predicting the outcomes of the remedial courses. Because the distribution of math remedial courses passed was bimodal around 0 and 1, we instead examined whether not students failed one or more math remedial courses (no = 0, yes = 1), predicting separately for 1998 and 1999. For 1998 MNSCU students, logistic regression results showed that two predictors, limited English proficiency ($\beta = -1.14$, $p<.05$) and minority ($\beta = .70$, $p<.05$), predicted the likelihood of failing one or more math remedial courses. For 1999, only on track ($\beta = -.86$, $p<.05$) was significant in the logistic regression analyses. Stepwise regression showed similar results, the two predictors in 1998 accounted for 4% of variance of failing one or more math remedial courses, and for 1999, on track accounted for 5% of variance.

Discussion

The increasing numbers of college freshmen taking remedial math courses in postsecondary institutions has attracted the attention of policy makers and educators to the quality of high school math preparation. This paper addressed the policy issue by examining the high school math preparation of students who took remedial math courses in public postsecondary institutions in Minnesota. The findings showed that most of the students taking remedial classes at the community/technical colleges were not “on track”. Indeed, the academic background for these students shows that their math performance even in 7th and 8th grades was average to below average (Maruyama & Chan, 2002).

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for the 1999 regression analyses.

These results suggest that many students aspiring to go to college either need better preparation before college or else will continue to need college remedial courses. Early interventions are needed to get the students back on track and encourage them to take high-level math courses on schedule.

For students who took remedial courses at the 4-year postsecondary institutions, our findings are consistent with the Utah studies' findings that a majority of students taking remedial classes have taken high-level math courses. In addition, a large percentage of students at the 4-year institutions who were on-track in their high school math course-taking still took math remedial courses. Our examination of high school course grades revealed that most of these students got a C or below for advanced math courses taken in the last two years of high school. These findings suggest that even though some students passed courses in the high schools, they had not attained competency levels in the subjects. Thus, poor mastery could be one of the reasons for students needed remedial education. If the goal is to reduce the number of students taking remedial math courses, expectations about math competency levels for high school and postsecondary courses must be aligned (The Institute for Higher Education Policy, 1998).

Some students in the remedial programs had completed one or more high-level math courses in high school, but still needed to repeat the same level or start at even a lower level math course in college. Lack of motivation could be a possible reason for these students to do worse in the placement examination. Nevertheless, some of these students, especially those who entered 4-year institutions, had completed higher-level math courses in their last two years in high school. This provides contrary evidence about poor motivation. A more likely alternative explanation is that the standards of the high school math courses may be less rigorous than standards of the remedial math courses in the postsecondary institutions. A more detailed investigation comparing the content and passing requirements of the math courses would be necessary to determine how to align the high school course standards with the college standards. Indeed, recently researchers have recommended that postsecondary institutions collaborate with the K-12 system (especially high schools) to develop a shared understanding on how to prepare students for entering college (Boylan, Bonham, & White, 1999; The Institute for Higher Education Policy, 1998).

In contrast to findings that potentially bring into question the quality of some high school math classes, students who completed high-level math courses had a higher passing rate on the remedial courses. These results suggest that better math preparation helps students in postsecondary remedial programs to pass remedial courses. This finding indicates that for students in the remedial programs, better math preparation in high school shortens the time taking remedial courses and reduces the risk of failure in the remedial programs. In other words, better math preparation certainly reduces both the time and financial costs in remediation, even if some of the students taking remedial classes seemingly don't belong in them.

Is better high school math preparation reducing the need of remediation?

The present paper does not contain enough information to answer this question. There is no doubt that in this sample, a large number of students in remedial programs were under-prepared in math when they entered college. At the same time, however, a substantial number of students who needed remediation had completed college preparatory classes, so course taking alone is not the total solution. A message to policy makers as well as educators is that the solution is complex, for there is no single “type” of student who takes remediation.

One limitation of the present study is that it looks only at students who took remedial courses. Future work needs to compare the high school math preparation of students in remedial program with those do not need remediation. This comparison should provide a more detailed answer to the above question. The students in this study are high school graduates before the implementation of high school standards. For the future, an interesting question is whether or not the imposition of standards and accountability will affect the numbers and proportion of college students who need remedial classes. In addition, continued work needs to extend the sample across cohorts and school districts to assure that the results are generalizable. Finally, future work needs to examine individuals in more detail to tease apart students with poor mastery from those who attain mastery but who show poor retention of information so that different interventions can be planned.

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Table 1

High School Math Preparation by Type of Postsecondary Institutions

	Type of Postsecondary Institutions				
	Community College A		Other Community/ Technical Colleges		University of Minnesota
High School Math Preparation	1998	1999	1998	1999	1999
Math Course-Taking Track					
Off-Track	59.7%	59.7%	68.3%	67.2%	38.1%
On-Track	40.3%	40.3%	31.7%	32.8%	61.9%
Highest Level Math Courses Passed					
Below Algebra 1	1.4%	3.2%	7.9%	3.4%	--
Algebra 1	18.1%	12.9%	23.8%	25.9%	1.6%
Geometry	15.3%	14.5%	15.9%	25.9%	7.9%
Algebra 2	48.6%	54.8%	46.0%	37.9%	65.1%
Above Algebra 2	16.7%	14.5%	6.3%	6.9%	25.4%
Took Math at 12th Grade					
No	54.2%	51.6%	63.5%	56.9%	34.9%
Yes	45.8%	48.4%	36.5%	43.1%	65.1%
N	72	62	63	58	63

Note: -- = no information

Table 2
High School Math Preparation and Number of Math Remedial Courses Taken by Type of Postsecondary Institutions

	Type of Postsecondary Institutions				
	Community College A		Other Community/ Technical Colleges		University of Minnesota
High School Math Preparation	1998	1999	1998	1999	1999
Off-Track					
One	58.1%	62.2%	58.1%	64.1%	50.0%
Two or more	41.9%	37.8%	41.9%	35.9%	50.0%
N	43	37	43	39	24
On-Track					
One	58.6%	76.0%	70.0%	68.4%	59.0%
Two or more	41.4%	24.0%	30.0%	31.6%	41.0%
N	29	25	20	19	39
Algebra I or Below					
One	57.1%	70.0%	65.0%	76.5%	100.0%
Two or more	42.9%	30.0%	35.0%	23.5%	--
N	14	10	20	17	1
Above Algebra I					
One	58.6%	67.3%	60.5%	61.0%	54.8%
Two or more	41.4%	32.7%	39.5%	39.0%	45.2%
N	58	52	43	41	62
No Math at 12th Grade					
One	66.7%	71.9%	60.0%	63.6%	68.2%
Two or more	33.3%	28.1%	40.0%	36.4%	31.8%
N	39	32	40	33	22
Took Math at 12th Grade					
One	48.5%	63.3%	65.2%	68.0%	48.8%
Two or more	51.5%	36.7%	34.8%	32.0%	51.2%
N	33	30	23	25	41
N	72	62	63	58	63

Note: -- = no information

Table 3

High School Math Preparation and Remedial Placement by Type of Postsecondary Institutions

	Type of Postsecondary Institutions				
	Community College A		Other Community/ Technical Colleges		University of Minnesota
High School Math Preparation	1998	1999	1998	1999	1999
Off-Track					
Fundamental	39.5%	24.3%	65.1%	53.8%	8.3%
Algebra	48.8%	43.2%	20.9%	41.0%	62.5%
Inter. Algebra	11.6%	32.4%	14.0%	5.1%	29.2%
N	43	37	43	39	24
On-Track					
Fundamental	13.8%	40.0%	60.0%	36.8%	--
Algebra	17.2%	16.0%	5.0%	42.1%	43.6%
Inter. Algebra	69.0%	44.0%	35.0%	21.1%	56.4%
N	29	25	20	19	39
Algebra I or Below					
Fundamental	63.4%	50.0%	70.0%	58.8%	--
Algebra	35.7%	30.0%	20.0%	41.2%	--
Inter. Algebra	--	20.0%	10.0%	--	100.0%
N	14	10	20	17	1
Above Algebra I					
Fundamental	20.7%	26.9%	60.5%	43.9%	3.2%
Algebra	36.2%	32.7%	14.0%	41.5%	51.6%
Inter. Algebra	43.1%	40.4%	25.6%	14.6%	45.2%
N	58	52	43	41	62
No Math at 12th Grade					
Fundamental	25.6%	43.8%	67.5%	54.5%	4.5%
Algebra	38.5%	28.1%	17.5%	39.4%	36.4%
Inter. Algebra	35.9%	28.1%	15.0%	6.1%	59.1%
N	39	32	40	33	22
Took Math at 12th Grade					
Fundamental	33.3%	16.7%	56.5%	40.0%	2.4%
Algebra	33.3%	36.7%	13.0%	44.0%	58.5%
Inter. Algebra	33.3%	46.7%	30.4%	16.0%	39.0%
N	33	30	23	25	41
N	72	62	63	58	63

Note: -- = no information

Table 4

High School Math Preparation and Proportion of Passing Remedial Math Courses by Type of Post-secondary Institutions

	Type of Postsecondary Institutions				
	Community College A		Other Community/ Technical Colleges		University of Minnesota
High School Math Preparation	1998	1999	1998	1999	1999
Math Courses-Taking Track					
Off-Track	0.57	0.54	0.60	0.37	0.51
	(.07)	(.07)	(.07)	(.07)	(.09)
On-Track	0.66	0.70	0.60	0.68	0.69
	(.08)	(.09)	(.11)	(.10)	(.07)
Highest Level Math Course Passed					
Algebra I or Below	0.39	0.55	0.58	0.47	1.00
	(.12)	(.14)	(.10)	(.12)	(--)
Above Algebra I	0.66	0.62	0.61	0.47	0.62
	(.06)	(.12)	(.07)	(.07)	(.05)
Took Math at 12th Grade					
No	0.55	0.66	0.53	0.57	0.66
	(.07)	(.08)	(.07)	(.08)	(.10)
Yes	0.67	0.55	0.73	0.34	0.61
	(.07)	(.08)	(.08)	(.09)	(.07)
N	72	62	63	58	63

Note: -- = no information

Numbers in parentheses are standard errors