Remediation in Maryland Higher Education

Part 3: Remedial Course Completion Within the First Year of Enrollment

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REMEDIATION IN MARYLAND HIGHER EDUCATION

PART 3: REMEDIAL COURSE COMPLETION IN THE FIRST YEAR OF ENROLLMENT

One of the most substantial concerns surrounding remedial education at the postsecondary level is the impact that it may have on student success and completion.[1] While Parts 1 and 2 of this series of briefs focused on providing context necessary to understand the concept and purpose of remediation and what postsecondary populations are assessed to need it, this brief, as well as those to follow, will focus on two of the most substantial questions surrounding developmental education in higher education – 1) Does it work?; and 2) Does it represent a barrier to persistence and completion of college?

Key takeaways from Part 3 of this series:

- While a large number of full-time students are assessed to need remedial work prior to completing credit-bearing coursework, many of them fail to complete necessary remedial work within their first year.
- As discussed in Part 2 of this series, the percentage of first-time, full-time undergraduate students assessed to need remediation at community colleges is much higher than at four-year institutions. In addition, community college students are much less likely to complete remedial courses in their first year of enrollment.
- At community colleges, students are equally likely to complete remedial courses in math as in English.
- At four-year institutions, students are much more likely to complete assigned remedial work in math than in English.

This brief will focus on remedial course completion in higher education as a way of evaluating the impact that remedial assessment and completion may have on an undergraduate student's enrollment behavior and academic success in the first year of postsecondary education. The analysis contained in this report will examine data at Maryland community colleges and four-year public institutions for all full-time students. Additionally, as Part 2 of this series showed, there are substantial differences across demographic groups regarding students' likelihood of being assessed to need developmental work. Accordingly, further analysis will review whether there might be differences in outcomes across demographic groups, including gender, age group, or race/ethnicity.[i]

METHODOLOGY

Analysis Cohort

Preparing data for this study began with the Fall 2017 first-time student cohort used in Part 2 of this series, which examined remedial assessment. These data utilized an enrollment file that contained demographic information on students, including their fall term remedial assessment,

[1] See endnotes for further information and sources that are discussed throughout this report.

race/ethnicity, gender, and age. Remedial assessment status was based upon the indication provided by the institution during the Fall 2017 semester.[ii] Students were classified as college ready or needing remediation in math and/or English based upon the reported fall assessment status.[iii] A student registration file containing information on all college courses in which a student was enrolled in and their course outcomes was matched against a file containing information on the content of those courses. Finally, students initially enrolled part-time were excluded from the analysis cohort due to the fact that the Career and College Readiness and College Completion Act (CCRCCA) establishes the expectation that remedial courses should be completed as early as possible to ensure completion of the associated credit-bearing courses within the first 24 credits. This would represent two semesters of full-time enrollment. This resulted in a final base cohort of 12,261 students at community colleges and 14,232 students at four-year public colleges and universities. [iv]

Data Limitations

There are a number of limitations inherent in using these data for analysis. As discussed previously, these analyses rely on several different data sets. Identifying students' enrollment in and completion of remedial and associated credit-bearing coursework, as well as the demographics of the student population, required a match across course information data, student registration data, and enrollment and demographic data.[v] While Part 2 of this series included analysis of all student demographics for those students assigned to remediation at both the community colleges and four-year public colleges and universities, this brief will focus on enrollment and completion activity at those institutions. Any records missing any of these components – student registration information, course information, or enrollment demographic information – were removed from the analysis.[vi]

As was also discussed in Part 2, student records provided by the institution indicate whether an undergraduate student has been assessed to need remediation in a given subject. However, these records do not provide more detailed information regarding the extent to which a student is assessed to need remediation. Some students may be assessed to require multiple remedial courses within the same subject area, such as a sequence of remedial math courses. Thus, while this analysis can identify those students who enrolled in and completed remedial coursework within a subject area, it cannot identify whether a student completed the full sequence of required developmental courses. This may then overstate the degree to which students who were assessed to need remediation completed it.

Similarly, as all information regarding assessment is based upon the initial term of enrollment, it is possible that some students would lack a remedial score during the fall semester but be assessed either later in the term or at another subsequent time. Some institutions also give students the ability to challenge their initial assessment by re-testing. A student challenging their score might initially be identified as needing remediation but then not be required to take it. At the individual student level, then, it is possible that there might be a small degree of understatement or overstatement of the need for remediation, which cannot be identified via available data.

Finally, as discussed in Part 1 of this series, institutions are increasingly adopting co-requisite models for remediation. This poses significant challenges in reporting, particularly at a statewide level. Utilizing a co-requisite remediation model means that institutions must define both what college-ready is and whether courses should be considered as developmental or college-level. While co-requisite courses have a remedial component, a student who successfully completes one of these courses is awarded college credit for their course. Thus, a student may be identified as needing remediation and not completing it, though this would be a reflection of the fact that they enrolled directly in a credit-bearing course. As institutions may interpret these situations differently, the comparability of these data may be somewhat constrained.[vii]

DO STUDENTS WHO ARE ASSESSED TO NEED REMEDIATION COMPLETE IT IN THEIR FIRST YEAR?

As discussed in Parts 1 and 2 of this series, while many students are assigned to need additional work to prepare them for college-level work when entering postsecondary education, not all students complete the work to which they have been assigned in their first year. This brief examines, by segment and subject, the extent to which full-time students enroll in and complete remedial work.

Community Colleges

As Table 1 shows, more than half of the full-time students assessed to need remediation in English did not successfully complete at least one of these courses by the end of their first year. This rate does not vary when looking at student groups by age or gender, but there are stark differences among racial groups.

Table 1: First-Year Remedial Course Completion Among Full-time Students Assessed to Need Remedial English Coursework, Community College Entering Cohort of Fall 2017

	Total # Assessed to Need Remediation	Assessed to Need and Completed Remediation in 1st Year		Assessed to Need and Did not Complete Remediation in 1st Year	
All Students	**3,427**	**1,616**	**47.2%**	**1,811**	**52.8%**
Males	1,724	769	44.6%	955	55.4%
Females	1,703	847	49.7%	856	50.3%
Hispanic	475	153	32.2%	322	67.8%
Black	1,425	698	49.0%	727	51.0%
White	1,028	537	52.2%	491	47.8%
Asian	175	67	38.3%	108	61.7%
Under 17	47	22	46.8%	25	53.2%
17-19	2,821	1,312	46.5%	1,509	53.5%
20-24	372	199	53.5%	173	46.5%
25+	187	83	44.4%	104	55.6%

Source:
Maryland Higher Education Commission, Enrollment Information System, Student Registration System, and Course Information System

A similar pattern plays out for math remediation (table 2), but the patterns by subject area show some notable differences, particularly between racial and ethnic groups.

Table 2: First-Year Remedial Course Completion Among Full-time Students Assessed to Need Remedial Math Coursework, Community College Entering Cohort of Fall 2017

	Total # Assessed to Need Remediation	Assessed to Need and Completed Remediation in 1st Year		Assessed to Need and Did not Complete Remediation in 1st Year	
All Students	**6,199**	**3,199**	**51.6%**	**3,000**	**48.4%**
Males	3,038	1,460	48.1%	1,578	51.9%
Females	3,161	1,739	55.0%	1,422	45.0%
Hispanic	923	451	48.9%	472	51.1%
Black	2,296	1,072	46.7%	1,224	53.3%
White	2,072	1,162	56.1%	910	43.9%
Asian	266	164	61.7%	102	38.4%
Under 17	93	59	63.4%	34	36.6%
17-19	5,021	2,591	51.6%	2,430	48.4%
20-24	702	342	48.7%	360	51.3%
25+	383	207	54.1%	176	46.0%

Source:
Maryland Higher Education Commission, Enrollment Information System, Student Registration System, and Course Information System

For remedial English course taking, white and black students had higher completion rates, and Hispanic and Asian students had similarly lower completion rates. However, for math remedial coursework, white and Asian students had similarly higher completion rates and black and Hispanic similarly lower completion rates. Most notable, however, is that white students consistently complete at higher rates – regardless of subject – than their minority peers.

When looking at remedial English and math course completion by other demographic measures, it is worth noting that students under 17 had a noticeably higher completion rate for math remediation compared to other age groups. Additionally, the completion rate gap between men and women was slightly higher for remedial math than English. Like English, however, women completed remedial coursework in math at a higher rate compared to men.

Four-Year Public Colleges and Universities

As Table 3 illustrates, the data show that there was a fair amount of variability across demographic groups in terms of rates of developmental English course completion. However, the extent of these differences varied by category.

Table 3: First-Year Remedial Course Completion Among Full-time Students Assessed to Need Remedial English Coursework, Four-Year Public College and University Entering Cohort of Fall 2017

	Total # Assessed to Need Remediation	Assessed to Need and Completed Remediation in 1st Year		Assessed to Need and Did not Complete Remediation in 1st Year	
All Students	**645**	**266**	**41.2%**	**379**	**58.8%**
Males	257	97	37.7%	160	62.3%
Females	388	169	43.6%	219	56.4%
Hispanic	39	21	53.9%	18	46.2%
Black	532	229	43.1%	303	57.0%
White	*	*	11.1%	*	88.9%
Asian	*	*	0.0%	*	100.0%
Under 17	*	*	44.4%	*	55.6%
17-19	618	258	41.8%	360	58.3%
20-24	*	*	26.7%	*	73.3%
25+	*	*	0.0%	*	100.0%

Note:
***** Data suppressed due to small sample size.
Source:
Maryland Higher Education Commission, Enrollment Information System, Student Registration System, and Course Information System

While very few students entering public four-year colleges and universities were assessed to need remediation in English, three times as many students were assessed to need some form of remedial math, as Table 4 shows. Remedial completion rates for math were nearly opposite those for English. With minimal exceptions, rates of math developmental completion were relatively similar across racial/ethnic groups, age groups, and genders.

Table 4: First-Year Remedial Course Completion Among Full-time Students Assessed to Need Remedial Math Coursework, Four-Year Public College and University Entering Cohort of Fall 2017

	Total # Assessed to Need Remediation	Assessed to Need and Completed Remediation in 1st Year		Assessed to Need and Did not Complete Remediation in 1st year	
All Students	**1,994**	**1,152**	**57.5%**	**842**	**42.5%**
Males	818	450	55.0%	368	45.0%
Females	1,176	702	59.7%	474	40.3%
Hispanic	130	84	64.6%	46	35.4%
Black	1,485	841	56.6%	644	43.4%
White	200	126	63.0%	74	37.0%
Asian	*	*	39.1%	*	60.9%
Under 17	*	*	61.8%	*	38.2%
17-19	1,893	1,098	58.0%	795	42.0%
20-24	59	30	50.9%	29	49.2%
25+	8*	3*	37.5%	5*	62.5%

Note:
***** Data suppressed due to small sample size.
Source:
Maryland Higher Education Commission, Enrollment Information System, Student Registration System, and Course Information System

As these data show, relatively few students at four-year public colleges and universities required remediation in either math or English. This is likely a function of admissions standards that allow institutions to screen applicants to ensure they are adequately prepared for college-level work. In both math and English, a large proportion of those assessed to need remediation failed to complete it within the first year. However, a far greater percentage of those assessed to need remedial math completed it than those who needed remedial English.

VARIATION BY TYPE OF INSTITUTION

Despite the fact that community colleges and public four-year institutions may serve very different populations, there are common threads to their remedial assessment and completion patterns. At both types of institutions, students are far more likely to be assessed to need remediation in math than in English. The rates of assessment vary across demographic groups, with black and Hispanic students more likely to be assessed to need remediation than white and Asian students. Similar to levels of assessment, completion rates vary widely across

demographic groups. However, at both two-and four-year institutions, students were more likely to complete remedial math than English.

As these data and the data presented in prior briefs of this series show, community colleges and four-year public colleges and universities enroll very different student populations. Students at community colleges are far more likely to be identified as needing additional preparation prior to enrolling in credit-bearing coursework. A key contributor to this is that admissions requirements at four-year public institutions serve as a screening function that is designed to indicate that students are truly college-ready, while community colleges are open-access institutions with minimal entrance requirements. It should be noted that community colleges, in particular, continue to focus on improving remediation through multiple strategies. These include efforts to accurately place students in appropriate remedial courses and to diminish barriers through innovations such has multiple measures assessment and co-requisite remediation.

CONCLUSION

The data show that substantial portions of students are assessed by their institution to need developmental work before they are able to move on to credit-bearing coursework. However, data also show that only about half of full-time students complete their assigned remedial courses within the first year. As Part 2 of this series discussed, there are substantial differences in math and English remedial course completion between four-year colleges and universities and community colleges. However, the differences in remedial completion across segments are far less stark than the differences in assessment shown in Part 2. As that brief showed, community college students, when compared to their public four-year institution peers, were nearly four times as likely to require remediation in at least one subject; yet they complete developmental coursework at fairly similar rates. Finally, differences in remedial course completion across demographic groups, particularly racial/ethnic groups, are generally smaller than those of remedial assessment at both types of institution.

IMPLICATIONS FOR POLICY AND PRACTICE

- To encourage student progression toward timely completion, institutions should work to incentivize remedial course completion as early as possible in a student's career. One method of doing this may be to ensure that registration blocks are in place to prevent students from registering for certain types of courses until necessary remedial coursework has been completed.
- The Maryland Higher Education Commission should work with institutions to ensure that they are meeting the expectations established in CCRCCA, particularly in ensuring that students complete necessary remedial work as early as possible to ensure that they are able to complete credit-bearing coursework in math and English within the first 24 credits of enrollment
- Institutions should ensure that their assessments to determine remedial placement accurately reflect a student's potential for success in credit-bearing coursework.

Additionally, institutions should seek to establish whether there may be methods other than non-credit, remedial courses, such as co-requisite remediation or supplemental tutoring, that might enable students to develop the knowledge and skills necessary to complete college-level courses.

- The Maryland Higher Education Commission should continue its work with institutions to ensure that they are utilizing standardized methods for reporting data on remediation, particularly reporting on co-requisite remediation models. This will enable more precise reporting on emerging instructional models.
- As discussed throughout this series of briefs, the landscape of developmental education is complex and rapidly evolving. The Maryland Higher Education Commission should continue working with institutions to ensure that the data elements captured throughout collections portray the most complete picture of what is occurring at the institutional level.

NEXT STEPS FOR RESEARCH

As this brief has shown, a large proportion of students fail to complete assigned remedial work within their first year of enrollment, which may prove a hindrance to their progression as they may be unable to complete credit-bearing coursework. One of the most frequently-voiced critiques is that remedial coursework represents a barrier to completion by delaying entry into credit bearing courses, thereby leading to poor first-year outcomes and extending the length of time it might take a student to graduate. To address these concerns, completing both remedial and credit-bearing coursework as soon as possible was one of the central focus points of CCRCCA. This was intended to encourage the timely meeting of academic milestones to facilitate college completion; however, the data show that students may not be meeting these first-year milestones and thereby delaying or derailing college completion.

To provide more insight regarding the extent to which remediation may represent a barrier to student success, upcoming research in this series will examine student enrollment and completion activity in credit-bearing courses, first-year outcomes, and persistence and completion.

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[i] As this analysis is limited to first-time, full-time undergraduate students assessed to need remediation, disaggregating data by demographic groups results in a number of small sample sizes. Future briefs that include both college-ready students and those assessed to need remediation have larger sample sizes that may be subject to less variation driven by the behavior of a small group.

[ii] Analyses throughout this brief are based solely upon assessment during the initial term of enrollment.

[iii] While some institutions also offer remedial coursework in reading, this report focuses on enrollment and completion of math and English courses due to the lack of credit-bearing courses associated with reading developmental work.

[iv] Limiting the analysis to full-time students disproportionately affects students enrolled at community colleges; while only 620 (4.2%) of first-time students at four-year colleges and universities in the analysis cohort for Part 2 were enrolled part-time, nearly half (43.4%) of students at community college students were enrolled as part-time

students in the fall. However, at both two-year and four-year institutions, remedial assessment rates were similar for full-time and part-time students.

[v] A unique student identifier was used to match demographic data contained in an enrollment file to student course registrations. This file was then matched to another file holding detailed course information.

[vi] This particularly affects students at Morgan State University, which is missing course information for all semesters included in this study.

[vii] If the proportion of students completing remedial math is distorted by the fact that co-requisite courses may not be identified as remedial, a much larger percentage of students may have completed some form of developmental work in math than the data illustrate.