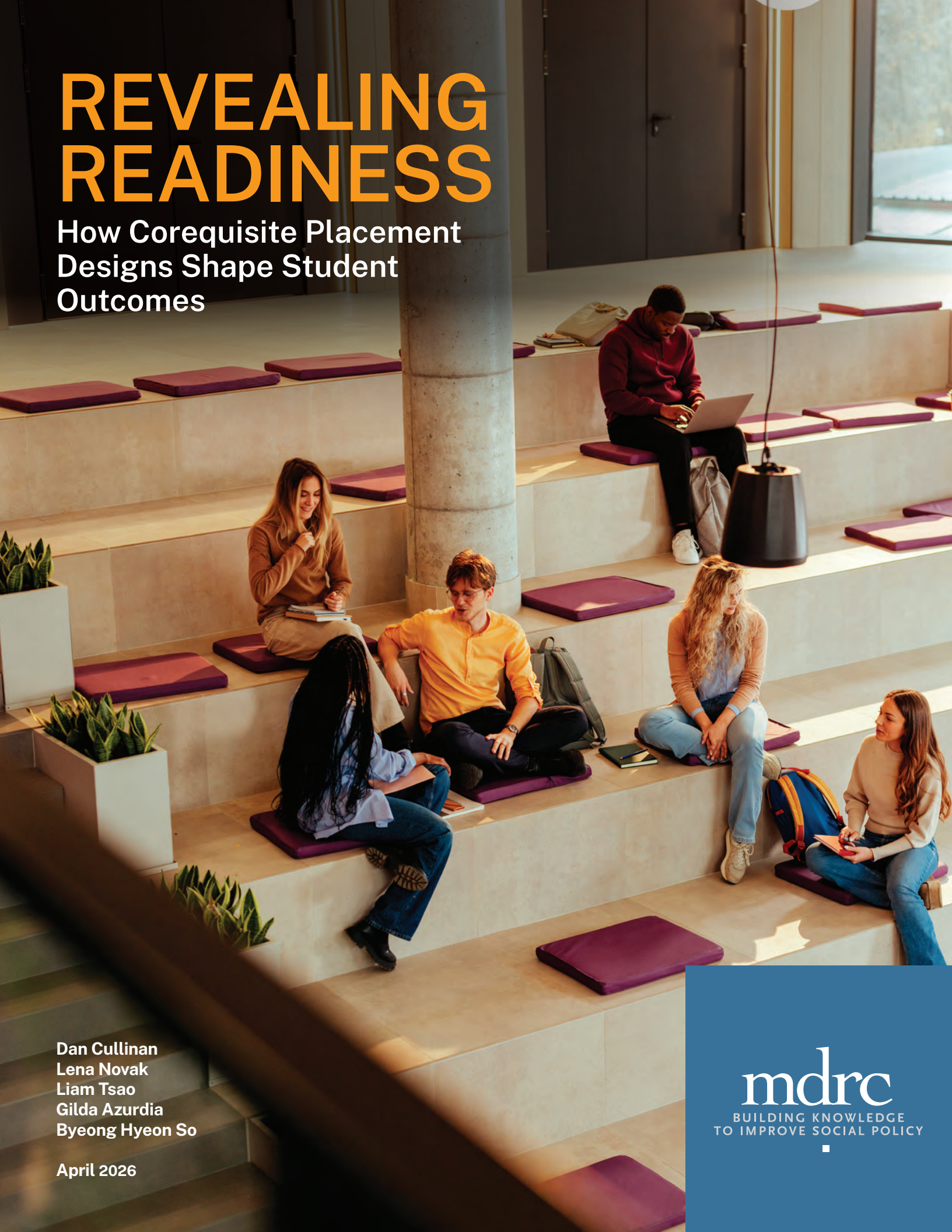

REVEALING READINESS

How Corequisite Placement Designs Shape Student Outcomes

Dan Cullinan
Lena Novak
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April 2026

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BUILDING KNOWLEDGE TO IMPROVE SOCIAL POLICY

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OVERVIEW

The postsecondary developmental (remedial) education landscape is changing. In recent years, corequisite models have emerged as a promising alternative to the traditional prerequisite model. In a prerequisite model, college students with developmental education needs are typically required to take a non-credit-bearing course before progressing to college-level courses. Under a corequisite model, students enroll in a college-level course and concurrently receive related academic support, often in the form of a separate course section. Studies have shown that corequisite models can help students stay in and graduate from college.

Many states and institutions are also reexamining how students are placed in courses, moving from standardized test-based placement policies to placement policies that incorporate multiple measures of academic preparedness such as high school grade point average (GPA), high school course-taking patterns, and noncognitive assessments.

To learn more about how community colleges are modifying their placement policies and to understand the effects of these changes, MDRC researchers collaborated with eight community colleges across the country to learn about their current placement policies and to develop a new placement system. The research team then worked with the colleges to implement this new system in the fall semester of 2024.

After implementation, the research team analyzed outcomes for students under the original and study placement systems—including students' placement recommendations, the courses they enrolled in, and their grades in their first-semester English and math courses. The research team also gathered insights from college faculty and staff members about the design of their corequisite models as well as factors that supported and hindered implementation. Finally, MDRC conducted a cost analysis to understand the feasibility of developing and implementing these new placement policies.

Key findings from MDRC's focus group sessions with college staff members include:

- Corequisite models aim to help students succeed in college through targeted support and skill building, but they can fall short of meeting the diverse needs of all learners.
- When designing a new placement policy, colleges may consider how previous knowledge and existing models can inform their approach, how to effectively incorporate high school GPA (which was the most common measure used to determine student readiness), and how to foster collaboration across departments.

Key findings from MDRC's data and cost analyses include:

- Not all students placed in corequisite courses need them. On average, at the analysis colleges, students who placed directly into college-level courses were as likely to complete the college-level course as those in the corequisite course, and they earned more college credits overall—especially in English.
- Revising placement policies at the participating colleges cost about $5 per student and consisted wholly of faculty and staff member time. Most of these one-time costs were associated with redesigning and implementing the new placement criteria for the first semester.

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The Authors

1

Introduction

As the United States has emerged from the COVID-19 pandemic, community colleges continue to be critical drivers of economic mobility. While total postsecondary enrollment remains below prepandemic levels, community college enrollment grew by over 6 percent in 2024, outpacing enrollment at four-year institutions.[1] In fall 2024, an estimated 10.5 million students around the country were enrolled in a community college.[2] Given this context, the question of how to best serve students who are deemed academically unprepared for college-level courses is more important than ever.

Historically, many community college students identified by their institutions as academically underprepared were required to take developmental courses before enrolling in college-level courses, often in the form of at least one additional non-credit-bearing prerequisite course. While prerequisite courses are intended to ensure student readiness, most students assigned to these courses never complete the required course sequence, let alone graduate.[3] Prerequisite courses can increase the time students spend on their degrees, creating a barrier to completion. Moreover, research suggests that some students may not need this additional support — they may be better served by enrolling directly in college-level courses.[4]

In recent years, corequisite models have emerged as a promising alternative to the traditional prerequisite model. At their most basic, corequisite models allow underprepared students to enroll in college-level courses and receive academic support, such as additional instruction or tutoring, at the same time. The adoption of corequisite models at community colleges has increased dramatically in recent years. A 2023 survey from a nationally representative sample of community colleges found that over 75 percent of English and math departments currently offer corequisite courses, up from 56 percent in English and 28 percent in math in 2016.[5] Corequisite courses, taken alongside college-level courses, enable students to begin credit-bearing courses sooner, which can increase student persistence.[6]

1. National Student Clearinghouse Research Center (2025).
2. Community College Daily (2025).
3. Bailey, Jeong, and Cho (2010); Clotfelter, Ladd, Muschkin, and Vigdor (2015); Scott-Clayton and Rodriguez (2015).
4. Litschwartz, Cullinan, and Hill (2024).
5. Litschwartz, Cullinan, and Plancarte (2023).
6. Logue, Douglas, and Watanabe-Rose (2019).

Simultaneously, many institutions have begun to reexamine how students receive course placement in the first place. Previously, many institutions have relied on a single measure — predominately statewide or national standardized tests — to determine student course placement. However, in recent years, multiple measures assessment (MMA) placement systems have become more common across the country.[7] MMA systems use more than one measure of academic preparedness — such as cumulative high school grade point average (GPA), course-taking patterns, and standardized test scores — to assess readiness for college-level courses.[8] Currently, at least 33 states have adopted policies that allow for the use of multiple measures to determine placement into college-level courses.[9] Two studies suggest that MMA can improve completion rates when it is used to allow more students to enroll in college-level courses.[10] At the same time, institutions are increasingly allowing students to make their own placement decisions through self-guided placement, often with the support of advisers and self-assessments.[11]

ABOUT THE STUDY

To learn more about how community colleges are modifying their placement policies in this new environment, and to evaluate the effects of these changes, MDRC conducted a randomized controlled trial with eight community colleges across the country.[12] MDRC collaborated with each college to learn about their existing placement policies and to develop a new study placement system. The research team then worked with the colleges to implement these new placement policies for the fall 2024 semester.

After the semester ended, the MDRC research team used placement and transcript data to analyze how the study affected students' placement recommendations, enrollment patterns, and first-semester English and math grades. The research team also gathered insights from college faculty and staff members about the design and implementation of their corequisite models as well as factors that supported and hindered placement implementation. Finally, MDRC conducted a cost analysis to understand the feasibility of developing and implementing new placement policies in the current context.

7. Litschwartz, Cullinan, and Plancarte (2023).
8. Litschwartz, Cullinan, and Hill (2024).
9. Education Commission of the States (2025).
10. Litschwartz, Cullinan, and Hill (2024).
11. Morton (2022).
12. In a randomized controlled trial, individuals or groups are randomly assigned either to a program group that is eligible to participate in the intervention, or to a control group that is not eligible to participate in the intervention. By comparing the outcomes of the two groups, which are not systematically different in any way (and, in large samples, very similar in all ways), a study can estimate the impact of the intervention without bias. The public preanalysis plan for this study can be found at: https://sreereg.icpsr.umich.edu/sreereg/subEntry/27440/pdf?section=all&action=download

This report primarily focuses on implementation and cost findings with a section that discusses impact findings from four of the participating community colleges with viable analysis samples.[13] The project aimed to understand the corequisite context and the design and implementation of the new placement policies at each of the eight community colleges, as well as to assess their impact on student outcomes and institutional costs. Through this work, MDRC researchers hope to provide practitioners with foundational knowledge on best practices for designing and implementing placement policies in a corequisite context.

The following research questions guided the study:

1. What is the design of the corequisite model at each college?

2. What are faculty members' and advisers' perceptions about the effectiveness of corequisite models?

3. What is the design of the original placement system at each college?

4. What is the design of the study placement system at each college?

5. What conditions facilitate or hinder the implementation of new placement systems?

6. What is the effect on academic outcomes of referral to a college-level course only compared with referral to developmental corequisites or prerequisites for students whose course referral depends on the placement system used?

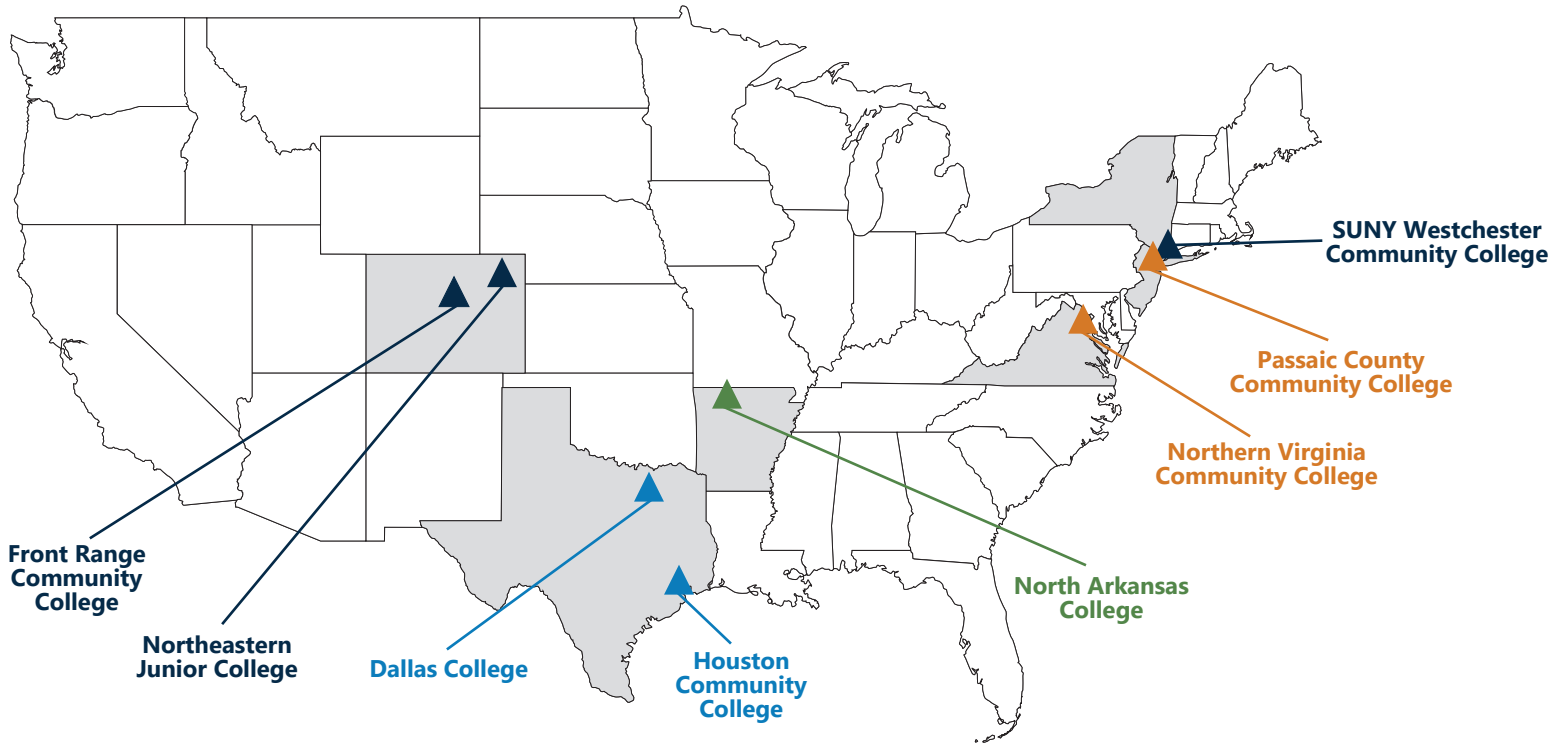
7. What is the associated cost of implementing a new placement system and changing the number of students assigned to developmental corequisites and prerequisites?

STUDY RECRUITMENT

In 2023, the Center for the Analysis of Postsecondary Readiness (CAPR) — a partnership between MDRC and the Community College Research Center — fielded a nationally representative survey to better understand the post-pandemic developmental education landscape.[14] Researchers examined placement policies and developmental course offerings at 100 randomly selected community colleges around the country. Of the institutions that offered corequisites in either English or math, four agreed to participate in the study. Four additional institutions were later recruited through separate efforts in Colorado and Texas.[15] See Figure 1.1 for more information on the eight colleges and their original and study placement practices.

13. The other four community colleges are excluded from the impact analyses due to insufficient placement contrast and incomplete data at several sites. This is explained further in Appendix B.
14. Litschwartz, Cullinan, and Plancarte (2023).
15. The two Colorado colleges were recruited as part of MDRC's ongoing engagement with the Strong Start to Finish network. The two Texas colleges were a part of a different MDRC study, the Texas Multiple Measures Assessment Randomized Controlled Trial, but were pooled with the six colleges to support more generalizable impacts, implementation, and cost research.

Figure 1.1. Participating Colleges



Group

▲ = Multiple Measures Assessment (MMA) to MMA

▲ = Standardized Test to MMA

▲ = MMA/Standardized Test to MMA

▲ = Guided Self-Placement to Guided Self-Placement

The eight participating colleges varied widely in their existing developmental course structures and policies for placing students. However, they all used at least some corequisite models for remediation and changed their placement policies so that a subset of students had placement measures that would result in referral to corequisite courses in one study group, but to stand-alone college-level courses in another. Despite this, many students in the former group were still placed into prerequisite courses, particularly in math.

Four groups of institutions emerged from this study. Northern Virginia Community College and Passaic County Community College modified their existing MMA systems by adding or simplifying components. Dallas College and Houston City College incorporated additional measures into their existing standardized test-based placement systems. North Arkansas College's math department modified its existing MMA system, while its English department adopted MMA after previously using standardized test scores to place students. Finally, Front Range Community College, Northeastern Junior College, and State University of New York (SUNY) Westchester Community College modified their existing guided self-placement systems.

ROADMAP TO THE REPORT

The remainder of this report highlights findings from the study. Chapter 2 describes how colleges designed and implemented their corequisite courses using insights from MDRC's focus groups with advisers and English and math faculty members. Chapter 3 outlines how colleges changed their placement systems for the study and broader lessons from designing and implementing new placement policies. Chapter 4 presents impact findings from the four colleges with viable analysis samples and Chapter 5 discusses the costs of implementing the new placement systems. Chapter 6 provides final conclusions for the report.

2

Understanding Corequisite Model Design and Implementation

Corequisite models share a common goal — to help students succeed in college-level courses — but in practice, they can have different structures. Many community colleges across the country, including the ones in this study, use a paired-course model in which students take a mandatory course that teaches key skills and competencies that are relevant to passing the college-level course. This course can come immediately before or after the college-level section or be taught on alternate days. Other corequisite models require students to attend tutoring sessions to reinforce course content or embed tutors directly within college-level sections to provide just-in-time support.[1]

The eight community colleges in this study used the semester-long paired-course model for their English and math corequisites. The number of developmental education credits (that are not applicable to a degree) associated with the corequisite course varied from one to three; however, most were three credits.[2] Although site recruitment for this study focused on colleges that offered corequisites, all eight colleges retained a limited number of prerequisites that some randomized students were placed in.[3] See Table 2.1 for detailed information on the participating colleges' corequisite models.

IMPLEMENTATION FINDINGS

The following subsections present insights from MDRC's interviews with advisers and faculty members at the eight colleges about their corequisite courses and implementation of the corequisite models. More details on the data sources and analysis process can be found in Appendix C.

1. Preston (2025).
2. Colleges may charge tuition for developmental education credits, but they typically do not count toward a student's degree or credential.
3. See Appendix A for more information about the prerequisite courses affected by the study.

Table 2.1. Corequisite Course Structure, by College

College	Developmental Education Credits	Modality	Instructional Style	Corequisites Offered in English and Math
Dallas College	3	In person or online	Taught by the same faculty member, either back-to-back or on different days	English: Composition support courses for English as a second language (ESOL) students and native speakers Math: Algebra and non-algebra support courses
Front Range Community College	3 (English) 1-2 (math)	In person or online	Taught back-to-back by the same faculty member	English: Composition and reading support courses Math: Algebra and statistics support courses
Houston City College	3	In person or online	Typically, though not always, taught by the same faculty member, either back-to-back or on different days	English: Composition support courses for ESOL students and native speakers Math: Algebra and non-algebra support courses
North Arkansas College	3	In person or online	Typically taught back-to-back or on alternating days by the same faculty member	English: Composition support courses Math: Algebra and quantitative reasoning support courses
Northeastern Junior College	3 (English) 1-2 (math)	In person or online	Taught back-to-back by the same faculty member	English: Composition and reading support courses Math: Algebra and statistics support courses
Northern Virginia Community College	3	In person, hybrid, or online	Typically taught back-to-back by the same faculty member	English: Composition support courses for ESOL students and native speakers Math: Algebra and non-algebra support courses
Passaic County Community College	3 (English) 1-2 (math)	In person	Taught back-to-back by the same faculty member	English: Composition support courses for ESOL students and native speakers Math: Algebra support courses
SUNY Westchester Community College	2-3	In person or online	Taught back-to-back by the same faculty member	English: Composition support courses for ESOL students and native speakers Math: Quantitative reasoning support courses

SOURCE: Course catalog information and focus group data from the eight study colleges.

Corequisite Courses: Defining Objectives and Structures

While corequisite courses aim to enhance student success through additional academic support and skill building, they may not fully meet the diverse needs of all learners. Faculty members emphasized that the objectives and structures of the corequisite courses are key to their overall quality.

Corequisite courses can provide additional academic skill development, which may foster longer-term student engagement. Staff members at all eight colleges described their corequisite support courses as valuable tools for helping students transition into college-level courses and navigate the broader college environment. Staff members at several institutions referred to corequisites as "building blocks" or "refresher courses" that support the development of study behaviors, connect students to campus resources like tutoring, and enable early academic intervention if needed. Some staff members also noted that corequisite course activities may be low stakes in nature, with a focus on learning, practice, and participation, rather than formal assessments. These courses can build students' confidence and comfort, particularly for those who may feel overwhelmed by direct entry into college-level courses. As one adviser at North Arkansas College explained, "This [corequisite course] just gives you a safety net … it allows you to, if you fall and slip, get back up and do it better the next time."

In addition to providing academic skill development, staff members at two of the colleges noted how corequisite courses were seen as a strategy to accelerate student progress. Rather than requiring students to complete at least an extra semester sequence of developmental education before moving to college-level courses, corequisite courses allow students to enroll in both the corequisite and college-level course simultaneously. Based on staff member observations, this approach can reduce the amount of time spent in entry-level courses and enable students to begin major-related courses sooner, which can enhance overall college engagement and motivation.

Corequisite courses may fall short of addressing the academic needs of students who would benefit from building more foundational skills. Some faculty members, especially in math departments, raised concerns about the effectiveness of corequisites for students who need support developing these skills. While corequisite courses are designed to provide just-in-time support, faculty members at several colleges noted that for students who would traditionally be placed in stand-alone prerequisite courses, this model may not offer sufficient instruction to bridge foundational gaps. Additionally, staff members at colleges in Colorado and New Jersey shared concerns about how state legislation that eliminates or limits prerequisite courses can leave students with insufficient support or guidance to succeed in college-level courses. As one English faculty member at Front Range Community College noted, "I think there's a place where [developmental education] can become a barrier, and there's a place where not having [developmental education] at all can become a barrier. So there has to be some middle ground where students can access college and have on ramps that work for them."

Corequisite courses can be difficult to plan and may require careful decision-making at the college level. One commonly cited challenge across institutions was the implementation of the two-instructor corequisite course model. In this model, one faculty member teaches the corequisite course and another teaches the college-level course. Faculty members across multiple colleges noted that this approach can lead to inconsistencies in teaching methods, course content, and homework expectations. These inconsistencies can in turn cause academic disruption and unnecessary confusion among students. While most participating colleges now use a model where one instructor teaches both the college-level and corequisite course (as depicted in Table 2.1), staff members at several colleges made this observation suggesting that the two-instructor course model may require substantial coordination and collaboration to be well-implemented.

Corequisite Course Implementation: Extra Support and Extra Time

Corequisite courses can provide more individualized guidance for students, but in practice, these courses can struggle to retain students due to the perceived stigma around developmental education and the burdens of added expense and time. These courses may also struggle to attract students who are allowed to choose their course sequence via guided self-placement.

Corequisite courses help instructors provide students with more focused, one-on-one support. Several English and math faculty members emphasized that corequisite courses can provide time for more personalized student engagement compared with standard college-level courses. These courses are typically smaller in size, which can give instructors the time to break down complex assignments into smaller, manageable tasks and address individual student needs. Faculty members may also use the additional class time to assess student understanding, respond to specific questions, and provide targeted support. As one English faculty member from Northeastern Junior College explained, "When I have 21 students in a … standard class, I don't always have that time to get to those deficiencies one-on-one and talk about them. So that's the beauty … when you can find out what the gap is." Faculty members at a couple of the colleges noted that in-person corequisite courses were especially effective at fostering this individualized attention.

The additional time and cost associated with taking corequisite courses can impact student participation and persistence. Staff members at over half of the colleges reported scheduling and enrollment challenges for corequisite courses, and staff members at several colleges reported challenges filling these courses. Some college advisers also noted student resistance to enrolling in corequisite courses because of the stigma associated with needing extra help, and concerns about the additional tuition costs and time commitment. Staff members at these institutions also expressed concern about chronic absenteeism in corequisite courses. It is possible that this absenteeism may be because students in these courses have more out-of-school responsibilities than students in college-level courses. While the corequisite courses can shorten the time to a degree by allowing students to take the college-level

course and corequisite pair in the same semester, they can put extra burdens on some student populations such as athletes, part-time students, and working students who may not have as much flexibility in their schedules. As one adviser from Front Range Community College explained, "[Students] don't love the idea of taking that secondary course because it doesn't count towards their degree. It's more money. And also, it gives them more credits for their semester. So, if they're working full-time too, it's just an added thing."[4]

4. Chapter 4 explores the effect on attempted credits when students are not required to take corequisites.

3

Placement Systems: Original and Study Designs

To prepare for the study, MDRC researchers worked with faculty members and administrators at each college to review their existing English and math placement policies and design a new study system informed by past experiences assessing student readiness. In all cases, placement is only a referral or recommendation and does not necessarily lead to enrollment in the corresponding course, even when it prevents enrollment in a college-level course.

This research involved three placement systems: multiple measures assessment (MMA), guided self-placement, and standardized test. What these systems looked like in practice differed significantly across the study colleges and was shaped by factors such as state regulations, previous placement models, and institutional context. That said, most colleges used two or more measures to determine placement. Cumulative high school grade point average (GPA) was used as a measure for all but one department, indicating that colleges still see value in using this measure after the pandemic. Several systems also incorporated measures such as standardized test scores and high school course-taking patterns.[1]

TYPES OF PLACEMENT POLICIES

Below is more information on the designs and measures that colleges used in their original and study placement policies to assess student readiness.

1. **MMA placement systems** use multiple indicators of college readiness such as cumulative high school GPA, high school course-taking patterns, and standardized test scores to place students into college-level courses. Studies by MDRC and others indicate that MMA, compared with a standardized test alone, can improve course completion when it

1. For the purposes of this study, high school course-taking patterns refer to the total number of years students have completed English and math courses, respectively.

is used to increase the number of students allowed to enroll in stand-alone college-level courses, instead of prerequisite developmental courses.[2]

2. In a **guided self-placement system,** students are given greater latitude to determine suitable courses for themselves, often with support from advisers and faculty members. This can take several forms. Students may be asked to assess their own ability or confidence in completing English or math questions. These self-assessments may evaluate additional measures including cumulative high school GPA and high school course-taking patterns. Students may then meet with an adviser to discuss how the available course options align with their academic and career goals. Students are encouraged to use self-assessments and adviser input to help determine placement; however, the decision is ultimately up to the student.[3]

3. **Standardized test-based placement systems** typically rely on a single exam to determine course placement. These exams may be nationally recognized — such as the ACT, SAT, or Accuplacer — or state-specific, such as the Texas Success Initiative Assessment 2.0.[4]

Table 3.1 outlines three strategies used by the study colleges to inform student placement. Three colleges or departments shifted from one form of MMA to another, three transitioned between different types of self-guided placement, and the final three moved from standardized test-based placement to MMA.

MMA to MMA

Three colleges and departments used MMA before the study: North Arkansas College's math department, Northern Virginia Community College's English department, and Passaic County Community College's English and math departments. Their ability to use MMA is partially due to state policy. For instance, the Arkansas Higher Education Coordinating Board encourages colleges in the state to adopt MMA, but there is no formal requirement.[5] In New Jersey, there is no required or recommended state placement policy, but in line with national trends, more institutions have begun to use MMA.[6]

The aforementioned colleges and departments decided to use MMA in their new placement design but changed the respective weights or composition of these measures. For instance, North Arkansas College's math department decided to more heavily weigh cumulative high school GPA as a measure in its existing MMA formula. Meanwhile, Northern Virginia Community College's English department incorporated an additional measure — the types of support students received in their high-school English courses — into its placement formula.

2. Litschwartz, Cullinan, and Hill (2024).
3. Morton (2022).
4. Litschwartz, Cullinan, and Hill (2024).
5. Daniels Sarica (2025).
6. Education Commission of the States (2025).

Table 3.1. Original and Study Placement Processes

Group	College and Department	Original Placement Process	Study Placement Process
Multiple Measures Assessment (MMA) to MMA	North Arkansas College, Math Department	Students are placed using their standardized test scores, cumulative high school grade point average (GPA), and number of years since high school.	Students are placed using the same measures, but cumulative high school GPA is weighted more heavily.
	Northern Virginia Community College, English Department	Students are placed using their standardized test scores and cumulative high school GPA.	Students are placed using their cumulative GPA and types of support (for example, tutoring) used in high school. Standardized test scores are not considered.
	Passaic County Community College, English and Math Departments	Students are placed using their standardized test scores, cumulative high school GPA, and high school course-taking patterns.	Students are either placed using their standardized test scores and grades in applicable high school courses (English) or their standardized test scores alone (math).
Guided Self-Placement to Guided Self-Placement	Front Range Community College, English and Math Departments	Students receive placement recommendations based on their cumulative high school GPA and perceived ability to be successful on academic assignments.	For math, students receive placement recommendations based on their cumulative high school GPA only. For English, students receive placement recommendations based on the same measures as the original placement process, but high school GPA is weighted more heavily.
	Northeastern Junior College, English and Math Departments	Students receive placement recommendations based on their cumulative high school GPA, and perceived ability to be successful on academic assignments.	Students receive placement recommendations based on their cumulative high school GPA only.
Standardized Test to MMA	Dallas College, English and Math Departments	Students are placed using their standardized test scores.	Students are placed using their standardized test scores, high school course-taking patterns, and cumulative high school GPA.
	Houston City College, English and Math Departments	Students are placed using their standardized test scores.	Students are placed using their standardized test scores, high school course-taking patterns, and cumulative high school GPA.
	North Arkansas College, English Department	Students are placed using their standardized test scores.	Students are placed using their standardized test scores and cumulative high school GPA.

Guided Self-Placement to Guided Self-Placement

Three colleges used guided self-placement before the study: Front Range Community College, Northeastern Junior College, and State University of New York (SUNY) Westchester Community College. In Colorado, colleges are required to use some form of MMA to place students into English and math classes.[7] The Colorado Department of Higher Education also mandates that colleges develop a placement policy to foster student completion of entry-level courses in their first year of study.[8] In line with Colorado's objectives, both Front Range Community College and Northeastern Junior College used standard measures like cumulative high school GPA, course-taking patterns, and noncognitive assessments in a student survey to inform guided self-placement. In New York, there is no required or recommended placement policy. However, in recent years, both the state (SUNY) and city (CUNY) systems have moved to limit the use of standardized tests and increase the use of high school GPA.[9] In light of minimal state regulation, SUNY Westchester Community College has developed a self-placement model centered on students' self-assessed confidence in English and math.

Both Colorado colleges adjusted how they used cumulative high school GPA for the study. At Front Range Community College, the math department lowered the GPA threshold, allowing students with a cumulative high school GPA of 2.8 to be more likely to be recommended to take college-level courses. The English department added a high school GPA cutoff — students with a cumulative high school GPA above 2.8 (3.0 weighted) were placed into college-level courses with corequisite support. Northeastern Junior College based its placement recommendations solely on students' high school GPA, without incorporating additional measures. SUNY Westchester Community College, on the other hand, added content-based questions about English and math — and questions about students' confidence in answering those questions — to its placement form.

Standardized Test to MMA

Dallas College, Houston City College, and North Arkansas College's English department originally relied largely on students' standardized test scores for placement. In Texas, many incoming college students are required to take the Texas Success Initiative Assessment 2.0 to assess their readiness for college-level courses.[10] By contrast, the Arkansas Higher Education Coordinating Board encourages the use of MMA but only requires that academic departments use consistent placement policies.[11] Because of this flexibility, North Arkansas College's English department relied only on standardized test scores for placement before the study, in contrast to the math department which originally adopted an MMA-based placement policy.

7. Education Commission of the States (2025).
8. Education Commission of the States (2025).
9. Education Commission of the States (2025).
10. Texas Education Agency (2023).
11. Education Commission of the States (2025).

For the study, these colleges and departments incorporated additional measures to complement the standardized test scores. North Arkansas College's English department considered students' cumulative high school GPA alongside their standardized test scores. Students at the two Texas colleges could place into college-level math if they completed four years of high school math or earned a cumulative high school GPA above 2.75 (Dallas College) or 3.0 (Houston City College). For English, students could receive college-level placement if they completed four years of high school English and had a cumulative high school GPA above 2.75 (Dallas College) or 2.70 (Houston City College).

LESSONS FROM DESIGNING AND IMPLEMENTING NEW PLACEMENT POLICIES

This section highlights some of the main takeaways MDRC researchers learned from staff members at the eight colleges that informed the design and implementation process of their study placement policies. To inform this section, MDRC researchers conducted focus groups with English and math faculty members, advisers, and placement staff members across the eight colleges.[12] More details on the data sources and analysis process can be found in Appendix C.

Study Fidelity: Adviser Compliance and Student Awareness

Determining the extent to which college staff members adhered to the study protocol is essential, as any variations could have influenced the implementation process and hence the study's outcomes. The paragraphs below outline themes observed across the eight colleges when determining study adherence.

Advisers' compliance with the study protocol played a vital role in determining how students were placed. College staff members (such as advisers) played a significant role in study implementation across many of the colleges.

Advisers at a few of the colleges reported using previous placement materials instead of the materials specifically designed for the study. Advisers at a few of the colleges also discussed using alternative placement procedures outside of study guidelines. For instance, advisers at one of the colleges noted how they would modify placement recommendations based on instructor requests. At another institution, some advisers would revert to the original placement measures if they noticed students were inaccurately reporting study measures such as high school course-taking patterns. Additionally, advisers at one college expressed concerns that the study's placement process might result in more students being placed in

12. Placement staff members are college staff members with a leadership role in the development and execution of the new placement rules. Staff members that fell under this category varied by institution but could include Vice Presidents, Placement Coordinators, Admission Directors, Advisers or Professional Development staff members, and English and Math Deans.

corequisite courses than the spots available in those courses, potentially straining financial aid and staffing resources. To address this concern, these advisers occasionally adjusted student placements. For example, in contrast to study protocol, if a student had earned As and Bs in English and math but had a low cumulative high school GPA, advisers would sometimes place them in a higher-level course.

Students' awareness of the study may have affected their behavior. College staff members at a few of the study institutions reported that students became aware of differences between the study and control conditions, either through observation or information provided by advisers. This awareness may have influenced student behavior, violating the single-blind intention of the study design.[13] For example, some college staff members noticed students questioning placement processes. At two of those institutions, some siblings in different groups spoke with each other and did not understand why their placement processes and recommendations were different.

In addition, advisers at one college directly reported discussing the study with students and how their placements were determined. One of these advisers described having conversations with students such as, "We have an opportunity for some students to bypass certain courses based on high school performance. Based on what you've shared, you qualify for that." While it is difficult to determine exactly how much these factors affected the study's findings, it is important to acknowledge that in some cases, the study influenced students' placement experiences in ways that distinguish it from a fully scaled placement system change.

Placement Design: Previous Insights and Tools for Collaboration

When designing a new placement policy, colleges may consider how previous knowledge and existing models can inform their approach, how to effectively incorporate high school GPA, and how to foster collaboration across departments.

Staff members' previous knowledge and adaptation of models from peer colleges can support placement design. College staff members cited two factors that influenced how they developed a study placement system. One factor was their knowledge or previous experiences utilizing alternative placement models. Staff members at over half of the colleges highlighted how past evidence or best practices from other institutions played a role in informing their study placement policies. Examples included their experience using MMA approaches in previous jobs, waivers issued during the COVID-19 pandemic that allowed the use of MMA, and previous randomized controlled trials conducted at their colleges.[14] Multiple colleges adapted study placement systems from other nearby institutions, tailoring the models to

13. In a single-blind study, researchers are aware of which research group participants are in, but the participants are not. This design helps prevent performance bias by keeping participants unaware of their research group.

14. During the COVID-19 pandemic, the Texas Higher Education Coordinating Board issued a Texas Success Initiative Assessment waiver in response to the challenges associated with in-person testing. Dallas and Houston City Colleges both used forms of MMA to place students during this time. In

fit their local contexts. For example, a Houston City College placement staff team member said, "We didn't come up with this out of our thin air. We did the best practices that Lone Star [College System] was doing and other places were doing."

College staff members expressed both support for and concerns about using cumulative high school GPA as a measure of student readiness. Staff members at more than half of the colleges emphasized the value of using cumulative high school GPA as a measure of student readiness. Cumulative high school GPA can reflect not only a student's academic performance but also traits like effort, determination, and confidence. These staff members argued that standardized tests often fail to capture a student's true potential, especially for those who experience test anxiety or struggle with timed assessments. As one placement staff member from Dallas College shared, "I don't think scores dictate if you're going to do good in a class. So, I don't think it's a good predictor, in my opinion … So, I was all for [MMA] because my brother's smart with math, but he sucks at taking tests. So, I know that there's more people like him, especially our first-time-in-college students."

Conversely, staff members at more than half of the colleges raised concerns about the variability and reliability of high school GPA. Unlike standardized tests, which offer consistent benchmarks, GPA can be influenced by factors such as grade inflation (staff members felt especially concerned about this occurring during and after the COVID-19 pandemic), inconsistent grading practices across schools, and the increase in artificial intelligence (AI)-assisted cheating practices.[15] These staff members emphasized the importance of ensuring accurate placement to support student success. To highlight this point, an English faculty member at Northern Virginia Community College noted that cumulative high school GPA may be an attempt to provide a holistic view of student readiness, "but there's all kinds of factors that muddy that water, right? Grade inflation or circumstances like the student moved and had tough mental challenges."

Faculty engagement was a key factor in the development of placement policies. Staff members across all colleges emphasized the importance of securing faculty support during the development of new placement policies. Faculty members valued being included in decision-making processes about placement design. This involvement fostered stronger collaboration across departments such as advising, testing, and instruction. For example, a Front Range Community College English faculty member explained, "The biggest thing that I think I've benefited from being involved in this is it's forced better and more conversations with people I ought to be talking to all the time. So, I'm now talking with one of the advising directors pretty regularly and figuring out together how we want to address communication gaps."

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the fall of 2016, SUNY Westchester Community College randomized students for an MDRC study on multiple measures assessment.

15. Analyses after the COVID-19 pandemic by Sanchez (2024), Sanchez (2025), and Soto-Ferrari, Layman, and Young (2024) suggest that high school GPA continues to be the best observable predictor of success in college, even if the predictor is slightly diminished by grade inflation resulting from COVID-era grading policies. Analyses by Cullinan and Biedzio Rizik (2023) and others have found that "high school attended" added very little predictive utility to models that already included high school GPA.

Placement Implementation: Strong Leadership and Tailored Learning Opportunities

Clear leadership, consistent collaboration, and structured training programs are key to successfully implementing a new placement policy.

Strong leadership and effective stakeholder communication can enhance implementation efforts. Consistent cross-departmental alignment is essential throughout the process. Staff members at more than half of the colleges identified at least one individual who served as a central resource throughout the implementation of the new placement system. For example, Dallas College's Testing Coordinator supported overall study implementation, and each campus had a designated success coach — called an "MMA champion" — to help facilitate the study placement system. Similarly, SUNY Westchester Community College's Testing Coordinator worked closely with English and math faculty members, regularly sharing updates and helping those departments refine their placement criteria.

However, staff members at some colleges identified challenges in sustaining collaboration throughout the process. A few staff members at the participating institutions noted philosophical differences between academic and nonacademic departments regarding student placement. For example, placement staff members at one institution raised concerns that the admissions department may prioritize increasing student enrollment over maintaining academic standards. These differences in values could result in misaligned placement decisions. Additionally, faculty members at several colleges expressed a desire for ongoing updates and transparency after the initial placement criteria were established.

Training and resources can support placement changes; however, it is important to consider their design, timing, and delivery. Staff members at over half of the colleges identified helpful resources that facilitated a smoother transition to the study placement policy. For instance, one institution integrated placement content into existing adviser training programs. Another college developed comprehensive, multimodal training activities, which included on-demand digital courses, virtual sessions, and in-person workshops to support a variety of staff members who were engaged in the implementation process. Many colleges also created and distributed "cheat sheets" to help advisers accurately place students.

Despite these efforts, some colleges encountered challenges with training delivery and staff engagement. Due to the study timeline, these training sessions mainly took place during the summer, when staff members' availability was limited. Some advisers expressed needing to leave the training sessions to attend to student needs. Other advisers found the training too fast-paced with limited hands-on learning opportunities. One adviser noted that while the trainer was highly knowledgeable, the lecture-style virtual training session made it challenging to fully grasp the material. As a result, some staff members asked for follow-up training sessions to feel more confident in applying the new placement criteria.

4

Impact Analysis

Colleges participating in this study agreed to randomly assign some students to the revised placement system detailed in Chapter 3 and others to the college's original placement system. While several causal studies have compared placement in corequisite remediation with placement in prerequisite remediation, this is the first study the authors know of that experimentally compares student outcomes after placement in corequisites with student outcomes after placement in college-level courses without support. The impact findings from Dallas College, Houston City College, Northern Virginia Community College, and SUNY Westchester Community College are presented below.[1] **In short, placement criteria that recommended more students to college-level courses without support allowed them to take more college-level credits without negatively affecting their first semester English and math course completion rates.**

DATA SOURCES AND FOLLOW-UP PERIOD

Before random assignment, colleges collected **placement measures** such as self-reported high school grade point average (GPA), high school course-taking patterns, test scores, and placement questionnaire data. These measures determined students' course referrals in English and math. Though these variables and their cutoff scores varied widely by college, they determined which students were in the main analysis sample: the students whose placement would be affected by the new placement criteria (the bump zone).

MDRC collected **student demographics** from college administrative data to describe the characteristics of the populations served and to explore variation *in the effects of the interventions* by race/ethnicity, gender, and Pell status.[2] Race/ethnicity, gender, and high school GPA are used as covariates in the impact analyses and to identify student subgroups.

1. An explanation of issues that prevented experimental impacts from being estimated at Front Range Community College, North Arkansas College, Northeastern Junior College, and Passaic County Community College are presented in Appendix B. Potential issues with Dallas College's analytic sample are explored further in Cullinan et al. (2026).
2. Federal Pell grants usually are awarded only to undergraduate students who display exceptional financial need and have not earned a bachelor's, graduate, or professional degree.

To analyze the effects of the intervention on student outcomes, MDRC also collected **transcript data** from each of the participating colleges, which were used to estimate college-level course completion rates and cumulative credits earned in the first semester.

PRIMARY ANALYSIS SAMPLE

Each college implemented new placement criteria. While these criteria varied widely from college to college — both in terms of the measures and the thresholds used to determine college readiness — all placement interventions had one thing in common: A subset of students had baseline placement measures that would place them in a developmental course (corequisite or prerequisite) in one research group, but in college-level courses without developmental support in another. This group of students, who fell into the bump zone, makes up the main analysis sample at each college. The percentage and number of students falling into (and outside of) this analysis sample at each college are shown in Appendix Tables B.2 through B.8 in Appendix B. Baseline characteristics from the fully randomized sample at all eight colleges are shown in Appendix Table B.1. The baseline characteristics of students in the bump zones at the four viable analysis colleges are shown in Table 4.1.[3]

The primary analyses compare the outcomes of students who were referred directly to college-level courses with the outcomes of students who were referred to corequisites or prerequisites, among students whose referrals changed due to the new placement system. Because each student's placement may be affected for either English or math or for both English and math, separate analyses with different (but overlapping) samples were conducted for each subject. This overlap means that the impacts estimated on the students in the math sample include some students (34 percent) who were placed higher in English *and* math, while others were only placed higher in math. Likewise, the impacts estimated on students in the English sample include some students (about 44 percent) who were placed higher in English *and* math, while others were only placed higher in English.

Placement is only a referral or recommendation and does not necessarily lead to enrollment in the corresponding course. The top panels of Tables 4.2 and 4.3 show that just over half of students in the analysis sample did not enroll in *any* English course in their first semester and two-thirds of students in the analysis sample did not enroll in *any* math course in their first semester. In addition, only about 31 percent of students in English and 16 percent of students in math enrolled in stand-alone college-level courses despite being placed into them, while about 7 percent in English and 2 percent in math enrolled in a stand-alone college-level course despite being placed into a corequisite or prerequisite course. This finding shows that many students delay enrolling in English and math courses regardless of their placement

3. Tests of significance across research groups were performed for each demographic variable. The only significant difference across research groups was the proportion of Black or African American students being lower on average in the group randomized to the revised placement criteria (22.4 vs. 25.2; $p = 0.024$). This is driven by differences at Dallas College, which is discussed in Cullinan et al. (2026). Impacts were adjusted for this and other baseline variables.

Table 4.1. Baseline Characteristics for the Analytic Sample, by College

Characteristic	Dallas	Houston City	Northern Virginia	SUNY Westchester
Gender (%)				
Female	59.9	49.5	41.1	53.2
Male	40.1	32.1	56.2	46.8
Missing	0.0	18.4	2.8	0.0
Average age	19	22	19	22
Race/ethnicity (%)				
Hispanic/Latino	64.3	37.5	38.4	47.2
White	8.4	6.2	22.2	18.7
Black or African American	19.3	27.8	23.2	28.6
None of the above[a]	4.4	8.2	12.2	4.0
Missing	3.6	20.2	3.9	1.6
Admission type (%)				
First-time college student	88.9	65.5	0.0	79.0
Transfer student	5.2	30.4	0.0	18.3
Other[b]	5.9	4.1	0.0	2.8
Missing	0.0	0.0	100.0	0.0
Pell status (%)[c]				
Pell eligible/received	69.7	51.3	9.2	40.9
Pell not eligible/not received	30.3	30.2	90.8	59.1
Missing	0.0	18.4	0.0	0.0
Average high school GPA[d]	3.1	3.0	2.4	2.2
Sample size (total = 4,510)	1,735	1,763	760	252

SOURCE: MDRC calculations using baseline information and placement survey data from Dallas College, Houston City College, Northern Virginia Community College, and SUNY Westchester Community College.

NOTES: Rounding may cause slight discrepancies in sums and differences.
Sample sizes may vary by characteristic because of missing values.
[a]"None of the above" includes students identifying as Asian, Pacific Islander, Native Hawaiian, American Indian, Alaskan Native, or multiracial.
[b]"Other" admission type includes international students, continuing students, returning/readmitted students, nondegree students, temporary/transient students, GED completers, online students, and high school concurrent students.
[c]Federal Pell grants usually are awarded only to undergraduate students who display exceptional financial need and have not earned a bachelor's, graduate, or professional degree.
[d]At three sites (Dallas, Houston City, and SUNY Westchester), a group of students had high school grade point averages reported on a 0-100 scale. These values were converted to a standardized 0-4 scale for consistency across sites.

Table 4.2. Academic Outcomes After One Semester Among All Students in the English Analytic Sample, Pooled

Outcome	College-Level Group	Developmental Group	Impact Estimate	95% Confidence Interval		P-Value
				Lower Bound	Upper Bound	
English course enrollment (%)						
College-level course	45.0	41.8	3.3 *	-0.4	6.9	0.079
Stand-alone course	31.3	6.9	24.4 ***	21.4	27.3	0.000
Corequisite course	13.6	34.7	-21.1 ***	-24.2	-18.0	0.000
Prerequisite course	3.3	3.2	0.1	-1.3	1.5	0.856
Did not enroll	51.7	55.1	-3.4 *	-7.0	0.2	0.067
English course completion (%)						
College-level course	28.8	28.2	0.6	-2.9	4.0	0.743
Stand-alone course	18.6	5.0	13.6 ***	11.0	16.1	0.000
While enrolled in a corequisite course	10.1	23.1	-13.0 ***	-15.8	-10.2	0.000
Prerequisite course	2.4	2.4	0.0	-1.2	1.2	0.950
Did not enroll or complete	69.0	69.4	-0.4	-3.9	3.0	0.801
All subjects						
Enrolled (%)	71.7	70.8	0.9	-2.1	3.9	0.562
Total credits attempted	7.28	7.19	0.10	-0.28	0.47	0.621
College-level	6.35	5.19	1.16 ***	0.83	1.50	0.000
Math	0.62	0.52	0.11 **	0.01	0.20	0.026
English	1.36	1.25	0.11 *	0.00	0.22	0.057
Other	4.37	3.42	0.95 ***	0.67	1.22	0.000
Developmental	0.94	2.00	-1.07 ***	-1.23	-0.90	0.000
Math	0.37	0.84	-0.48 ***	-0.59	-0.36	0.000
English	0.56	1.15	-0.59 ***	-0.70	-0.49	0.000

(continued)

Table 4.2 (continued)

Outcome	College-Level Group	Developmental Group	Impact Estimate	95% Confidence Interval		P-Value
				Lower Bound	Upper Bound	
Total credits earned	4.61	4.73	-0.12	-0.49	0.24	0.508
College-level	4.00	3.46	0.54 ***	0.22	0.85	0.001
Math	0.28	0.29	-0.01	-0.08	0.06	0.774
English	0.87	0.85	0.02	-0.08	0.13	0.657
Other	2.84	2.32	0.52 ***	0.27	0.77	0.000
Developmental	0.62	1.28	-0.66 ***	-0.80	-0.52	0.000
Math	0.20	0.51	-0.30 ***	-0.40	-0.21	0.000
English	0.41	0.76	-0.36 ***	-0.45	-0.27	0.000
Sample size (total = 2,446)	1,283	1,163				

SOURCE: MDRC calculations using transcript data from Dallas College, Houston City College, Northern Virginia Community College, and SUNY Westchester Community College.

NOTES: Rounding may cause slight discrepancies in sums and differences.
Distributions may not add to 100 percent because categories are not mutually exclusive.
The p-value indicates the likelihood that the estimated impact (or larger) would have been generated by an intervention with zero true effect.
Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.
Estimates are adjusted by college, gender, race/ethnicity, and grade point average. These adjustments may result in negative adjusted means.

Table 4.3. Academic Outcomes After One Semester Among All Students in the Math Analytic Sample, Pooled

Outcome	College-Level Group	Developmental Group	Impact Estimate	95% Confidence Interval		P-Value
				Lower Bound	Upper Bound	
Math course enrollment (%)						
College-level course	24.2	13.3	10.9 ***	8.2	13.6	0.000
Stand-alone course	15.7	1.7	14.0 ***	12.0	15.9	0.000
Corequisite course	8.6	11.6	-3.0 ***	-5.1	-1.0	0.004
Prerequisite course	9.5	20.1	-10.5 ***	-12.9	-8.1	0.000
Did not enroll	66.2	66.6	-0.4	-3.6	2.9	0.813
Math course completion (%)						
College-level course	11.0	9.1	1.9 *	-0.2	4.0	0.068
Stand-alone course	5.9	0.9	5.0 ***	3.7	6.3	0.000
While enrolled in a corequisite course	5.1	8.2	-3.1 ***	-4.8	-1.4	0.001
Prerequisite course	6.8	13.9	-7.1 ***	-9.2	-5.0	0.000
Did not enroll or complete	82.1	77.0	5.1 ***	2.3	7.9	0.000
All subjects						
Enrolled (%)	85.1	84.3	0.8	-1.0	2.6	0.390
Total credits attempted	8.97	8.92	0.05	-0.24	0.34	0.732
College-level	7.45	6.35	1.10 ***	0.83	1.37	0.000
Math	0.74	0.40	0.34 ***	0.26	0.42	0.000
English	1.64	1.59	0.04	-0.06	0.14	0.408
Other	5.07	4.35	0.72 ***	0.47	0.97	0.000
Developmental	1.52	2.58	-1.05 ***	-1.23	-0.87	0.000
Math	0.77	1.41	-0.65 ***	-0.78	-0.51	0.000
English	0.75	1.16	-0.41 ***	-0.51	-0.31	0.000

(continued)

Table 4.3 (continued)

Outcome	College-Level Group	Developmental Group	Impact Estimate	95% Confidence Interval		P-Value
				Lower Bound	Upper Bound	
Total credits earned	5.83	6.11	-0.28	-0.61	0.06	0.105
College-level	4.83	4.40	0.43 ***	0.14	0.72	0.003
Math	0.34	0.27	0.06 *	0.00	0.12	0.056
English	1.04	1.03	0.01	-0.09	0.11	0.802
Other	3.45	3.10	0.36 ***	0.11	0.60	0.004
Developmental	1.00	1.71	-0.71 ***	-0.87	-0.55	0.000
Math	0.51	0.95	-0.44 ***	-0.56	-0.32	0.000
English	0.49	0.76	-0.27 ***	-0.36	-0.18	0.000
Sample size (total = 3,136)	1,616	1,520				

SOURCE: MDRC calculations using transcript data from Dallas College, Houston City College, and SUNY Westchester Community College.

NOTES: Rounding may cause slight discrepancies in sums and differences.
Distributions may not add to 100 percent because categories are not mutually exclusive.
The p-value indicates the likelihood that the estimated impact (or larger) would have been generated by an intervention with zero true effect. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.
Estimates are adjusted by college, gender, race/ethnicity, and grade point average. These adjustments may result in negative adjusted means.

recommendation, and that a few students disregard their placement recommendation, either through an appeals process or through a self-placement process.

Recommending these students to stand-alone college-level courses resulted in about an 11 percentage point increase in college-level math enrollment but had little effect on college-level English enrollment when corequisite courses were included. In English, this is a test of moving about 24 percent of students from a corequisite to a stand-alone college course. In math, this is a test of moving about 11 percent of students from a prerequisite to a stand-alone college course and about 3 percent of students from a corequisite to a stand-alone college course.

MAIN FINDINGS

The public preanalysis plan presented several hypotheses about expected impacts: little to no effect on enrollment in college or enrollment in English and math courses; little to no effect on completion of college-level English and math courses; and direct referral to college-level courses, compared with referral to corequisites, will yield slightly higher overall college-credit accumulation and credential completion.[4] While it is too soon to know the effect on credential completion, most of the hypotheses were borne out by the evidence, particularly in English.

In English, placement criteria that allowed more students to take college-level courses without a corequisite did not have a negative effect on the primary student outcome of English college-level course completion. Students whose placement was bumped up to a college-level course without a corequisite were just as likely to successfully complete that course during that semester as their counterparts in the developmental placement group who were placed into a corequisite course.

In English, the major change in course-taking behavior was from taking a college-level course with a corequisite to students taking a stand-alone college-level course. Specifically, 34.7 percent of the group referred to developmental education took a corequisite English course, whereas 13.6 percent of the group referred to a college-level course took a corequisite English course (see of the first panel in Table 4.2). Despite this contrast in corequisite support, the second panel in Table 4.2 shows about 28 percent of students in both groups passed the college-level course, implying that corequisite remediation was not helpful for these students.

In math, placement criteria that allowed more students to take college-level courses without a corequisite or prerequisite did not have a negative effect on the primary student outcome of college-level math course completion. Students whose placement was bumped up to a college-level course without a corequisite or prerequisite were 1.9 percentage points ($p = 0.068$) more likely

4. The study's public preanalysis plan is linked here: https://sreereg.icpsr.umich.edu/sreereg/subEntry/27440/fileAction?name=Coreq-Assess-Impact-Analysis-Plan.pdf.

to successfully complete that course during that semester than their counterparts in the developmental placement group who were placed into a corequisite or prerequisite course.[5]

In math, most of the changes in course-taking behavior were to move students out of prerequisite math courses and into stand-alone college-level courses. Referral to college-level math led to a 14 percentage point increase in taking stand-alone college-level math. Only 9.5 percent of students referred to college-level math took a prerequisite math course compared with 20.1 percent of students referred to developmental math (see the first panel in Table 4.3). The contrast in math corequisite enrollment was much smaller, with 8.6 percent of the college-level group opting to take corequisite courses compared with 11.6 percent of the developmental group. Despite these changes in developmental course-taking patterns, the second panel shows little change in the completion of college-level math courses during the first semester, with 11 percent of the group assigned to college-level courses and 9.1 percent of those assigned to developmental courses passing the college-level course. More follow-up research is needed to understand the full impact on students who would have been assigned to prerequisites because some of those students assigned to prerequisites are expected to enroll in and complete college-level math in subsequent semesters.

Despite the slight positive bump of 2 percentage points in college-level math course completion during the first semester, pass rates declined among those who enrolled in college-level math (from 68 percent to 46 percent). These rates were calculated by dividing the college-level math course completion rates in Table 4.3 by those same courses' enrollment rates. It is important to note that because only about a third of students in the analysis sample took math, these pass rates are affected by students placing themselves into the courses and do not represent a causal effect of MMA placement alone. While it is premature to say whether this will translate into lower completion (or throughput) rates for the MMA group, it lends some credence to the hypothesis that moving students on the margins of college readiness from prerequisites to corequisites might be a better option than moving them directly into stand-alone college-level courses.

There were positive effects on completion of college credits in other subjects. In both English and math, students whose placement was bumped up to a stand-alone college-level course completed significantly more college credits during that semester — about half a credit more on average for the English and math samples. Given the null to small magnitude effects on completing college-level courses in English and math, these positive effects are a result of students who did not take corequisite courses having space in their schedules to take an additional college-level course.

While the intervention had no effect on total credits attempted or earned (including college-level and developmental credits), the composition of these credits changed. Students in the college-level group attempted approximately one more college-level credit and one fewer developmental education credit than the developmental group. Meanwhile, they *earned* ap-

5. See Appendix A for a list of the corequisite and prerequisite courses affected by the evaluation.

proximately half a college-level credit more and half a developmental education credit less than their counterparts. If all else is equal, it is preferable to earn more college-level credits and fewer developmental credits.

Comparing Non-Analysis Colleges with Analysis Colleges

Front Range Community College, North Arkansas College, and Northeastern Junior College did not change enough placement referrals across research groups to allow for meaningful analyses. These colleges had the smallest samples in the study and used manual placement processes with no automation or information technology (IT) support and limited staff training. The placement changes themselves were limited, typically involving adding or replacing similar measures. This suggests that for these types of placement systems, replacing one self-reported measure with another may not be worthwhile.

For Dallas College, Houston City College, Northern Virginia Community College, and SUNY Westchester Community College, implementation of the new placement system combined IT support with much more extensive staff training. Moreover, three of these colleges tested criteria that de-emphasized placement tests in favor of high school GPA. The combination of these placement criteria with the higher fidelity of implementation afforded by IT support and training changed how many students were placed. This suggests that if a college is going through the trouble of redesigning its placement criteria, it should consider supporting these operational elements.

5

Costs

The costs of this intervention include the time spent designing revisions to placement policies, the time and resources spent training staff members on those changes, and the time and resources spent putting those changes into practice. All of these activities are predominantly associated with setting up a new placement system for the first time and would not be recurring. This study conceptualizes costs as the direct costs of these tasks, the indirect (or induced) costs of the intervention, and the net costs (the sum of direct and indirect costs). These are described in more detail below.

DIRECT COSTS

The average college spent approximately $13,230 designing and implementing its placement system. This ranged from about $2,570 to about $25,410. In terms of per student costs, the average cost per randomized student was about $5 (or $14 per student in the analysis sample bump zone).[1] However, this ranged from $25 to $71 per randomized student at the three smallest sites without automation, to as low as $1 per student at the largest site.

The costs of reviewing, revising, and operationalizing placement criteria for English and math were overwhelmingly generated by admissions, testing, advising, and administrative staff members' time. Others who contributed smaller amounts of time include faculty and staff members in colleges' registrar, information technology (IT), and other offices such as institutional research. Costs for each of these roles are presented in Table 5.1.

Staff members in each of these categories played a significant role in implementing the interventions. While placement approaches varied widely from college to college, institutions had similar personnel needs regardless of the placement criteria they chose to implement. Administrators worked with faculty members on the placement design process. Next, admissions, testing, and advising staff members prepared for the new system by creating processes for the collection of new measures (when applicable), hosting training sessions,

1. These per student amounts include both program and control students because the costs would have been equivalent if the new placement systems had been scaled to all students instead of only the randomized students (as would be the case in most real-world applications).

Table 5.1. Direct Costs of the Program

Program Component	Per Hour Average ($)	Per College Range ($)	Per College Average ($)	Per Student Average ($)	Percentage of Total
Personnel					
Information technology	120	0-6,920	2,440	1	18
Admissions/testing/advising	70	650-8,980	3,660	1	28
Faculty and registrar	100	570-6,210	2,660	1	20
Administrative	70	210-8,430	3,330	1	25
Other	80	0-4,960	1,150	0	9
Total direct costs	90	2,570-25,410	13,230	5	100

SOURCE: MDRC calculations based on program expenditure data from the eight participating colleges. Bureau of Labor Statistics national wage data were used to calculate rates by category, plus overhead and benefits (1.5 multiplier).

NOTES: Rounding may cause slight discrepancies in sums and differences. All values rounded to the nearest $10 except per student averages, which are rounded to the nearest $1. Program costs are based on direct costs during the first semester of the program. All costs are shown in 2024 dollars.

and implementing new placement criteria for the randomly selected group of students. Other departments, such as institutional research, supported this process. Direct costs that were not related to personnel expenses, such as space and materials, were negligible.

There is some correspondence between the total cost and the size of the sample of students, with the lowest cost reported at the site with the smallest randomized sample (Northeastern Junior College) and the highest cost reported at the site with the second largest sample (Dallas College). The smaller sites used a more manual approach to placement and therefore did not usually have IT costs, while larger sites needed IT support to make implementation possible. The three smallest sites had the lowest *total* costs, but they had the highest *per student* costs because of their small samples. At each of these sites, costs exceeded $25 per student.

These costs were overwhelmingly startup costs that would not be required in subsequent semesters if the new criteria were kept in place. Activities such as designing the criteria and putting the placement systems and processes into practice would not have to be repeated until the next placement system revision. This means that an already low-cost-per-student intervention would be even lower if it was continued in future semesters.

INDIRECT COSTS

Changes in placement policy also change course-taking patterns, which may indirectly increase (or decrease) costs for students, colleges, and society. Students at Dallas, Houston

City, Northern Virginia, and SUNY Westchester took fewer developmental courses under the new placement policy. Students in the college-level placement group spent less on developmental courses, but more on college-level courses than those in the developmental placement group. Across all students, this trade-off was net zero with total credits staying the same and the increase in college credits balancing out the developmental credits not taken.[2] This suggests that there is no indirect societal cost associated with the courses taken, nor any indirect cost to the colleges. At the same time, the trade-off may represent savings for students who value college credits, which apply to transfers or degrees, over developmental credits, which do not.

NET COSTS

Net costs are the sum of direct and indirect costs. Because of null effects on all types of credits attempted, there are no indirect costs. Thus, direct costs represent net costs in this case. Since the placement policy revision appears to be helping some students, it may be an efficient investment at about $30 per additional college credit earned at the four analysis colleges.[3]

2. This assumes developmental courses cost roughly the same to offer per student as college-level courses. For example, if developmental course faculty members were less expensive, but classes were generally smaller, this would still be the case. If on the other hand, as with many corequisites, the course size and the faculty member costs are the same as in the college section, this would also be the case. However, it is always possible that per student costs are different for developmental corequisites or prerequisites, in which case there could be a slight indirect cost or savings.
3. Compare with other interventions on MDRC's ROI tool: https://www.mdrc.org/intervention-roi-tool/.

6

Conclusion

Revising placement criteria is an opportunity to revisit assumptions about how "college-ready" students are identified and which incoming students should receive additional academic support. When designing a new placement system, college staff members recommend considering how previous knowledge and existing models can inform their college's approach, how to effectively incorporate high school grade point averages into the placement criteria, and how to foster collaboration across departments. Additionally, colleges must consider the courses that will be affected by the new placement system, including corequisite courses. Based on implementation research conducted at the eight study colleges, corequisite models can provide more tailored support for students, but these courses may struggle to attract and retain students due to perceived stigma and the burdens of added expense and time.

Revising placement criteria can have varying costs and may or may not substantively change student placements. In this study, many of the colleges that made small, manually implemented changes to placement criteria did not see much difference in the resulting student placements. Despite this, there is room for improvement in placements, as evidenced by the four colleges that moved a large number of students out of developmental corequisite recommendations in English, into stand-alone college-level English course recommendations. These students were just as likely to pass college English and were able to replace their developmental credits with college-level courses in other subjects. In the three colleges that made these changes in math, much of the movement was out of prerequisites, with similar results on academic outcomes. However, math pass rates (among those students who took the college-level course) were concerningly low for those in the college-placement group. This finding suggests that neither alternative (a traditional prerequisite nor a college-level course without academic support) worked well for most students affected by math placement changes, and that there is an opportunity for more corequisite options to be offered to these students.

While placement policy is no panacea, using multiple measures to bump up students on the margin of being able to take college-level courses without developmental support into those courses continues to yield positive results.

APPENDIX

A

Corequisite and Prerequisite Courses Affected by the Study

Appendix Table A.1. Corequisite and Prerequisite Courses Affected by the Study

College	Corequisite and Prerequisite Courses Affected by the Study
Dallas College	ESOL Integrated Reading and Writing (ESOL 0315) Integrated Reading and Writing (DIRW 0315) ESOL Listening/Speaking (ESOL 0031–0034) Skill Development in Listening/Speaking (ESOL 0036) ESOL Reading (ESOL 0041–0044) Skill Development in ESOL Reading (ESOL 0046) ESOL Writing (ESOL 0051–0054) ESOL Grammar (ESOL 0061–0064) Developmental Mathematics Algebra Support (DMAT 0315) Developmental Mathematics Non-Algebra Support (DMAT 0317) Developmental Mathematics (BASM 0053, DMAT 0305, DMAT 0307)
Front Range Community College	Studio 1021 (ENG 0094) Composition and Reading (ENG 0090) College Algebra Support (MAT 0340) Algebraic Literacy (MAT 0300) Algebraic Literacy Lab (MAT 0200) Quantitative Literacy (MAT 0250)
Houston City College	ESL Integrated Reading/Writing Course for ENGL 1301 (ESOL 0370) Integrated Reading/Writing Course for ENGL 1301 (INRW 0300) Advanced Intermediate Conversation for Foreign Speakers (ESOL 0349) Advanced Intermediate Reading for Foreign Speakers (ESOL 0350) Advanced Intermediate Comprehension for Foreign Speakers (ESOL 0351) Advanced Intermediate Grammar for Foreign Speakers (ESOL 0352) Advanced Reading for Foreign Speakers (ESOL 0353) Advanced Comprehension for Foreign Speakers (ESOL 0354) Advanced Grammar for Foreign Speakers (ESOL 0355) Advanced Conversation for Foreign Speakers (ESOL 0355) Integrated Reading & Writing I (INRW 0410) Integrated Reading & Writing II (INRW 0420) Integrated Reading & Writing I Companion Course (INRW 0100) Intermediate Algebra (MATH 0314/MATH 0314P) Basic Concepts for Business Math (MATH 0324/0324P) Introductory Algebra (MATH 0332/MATH 0332P) Basic Concepts for Statistics (MATH 0342/MATH 0342P) Basic Mathematics (MATH 0106) Basic Math & Business Math (MATH 0424P) Basic Math & Contemporary Math (MATH 0432P) Basic Math & Statistics (MATH 0442P)
North Arkansas College	Fundamentals of Language (CP 0913) Introduction to Language (CP 0816) Quantitative Reasoning Enhancement (CP-0213) College Algebra Enhancement (CP-0223) Foundations of Math (CP 0923)

(continued)

Appendix Table A.1 (continued)

College	Corequisite and Prerequisite Courses Affected by the Study
Northeastern Junior College	Studio 1021 (ENG 0094) Composition and Reading (ENG 0090) College Algebra Support (MAT 0340) Algebraic Literacy (MAT 0300)
Northern Virginia Community College	English Composition Readiness (EDE 11) College Support ESL (ESL 95) English Composition Preparation (EDE 10)
SUNY Westchester Community College	Writing Studio (ENG 99) Introduction to Academic Writing 1 (ESL 94) Writing for College 1 (ENG 91) Foundations of Quantitative Reasoning (MATH 88) Quantitative Reasoning Studio (MATH 99) Pre-Algebra (MATH 92) Beginning Algebra (MATH 93)

NOTE: Passaic County Community College did not provide student-level placement or outcome data.

APPENDIX

B

Randomized Controlled Trial

STUDY DESIGN

Randomized controlled trials, when well implemented, provide rigorous, unbiased estimates of causal program effects. In this study, MDRC randomly assigned interventions to students within colleges. Staff members were aware of a student's assignment during the placement process. Students were not necessarily told of the trial (which was performed under a Family Educational Rights and Privacy Act research exception). Students may have been able to infer their study group based on their measures and placement results, but staff members were instructed not to inform them of this.

This study aims to estimate the effectiveness of being referred to a college-level course without required academic support versus corequisite or prerequisite developmental courses among the subpopulation who receive a different referral depending on the placement system they are referred by.

BASELINE PLACEMENT AND DEMOGRAPHIC DATA

Students who either met with an adviser or who logged into the online course registration system were randomized at the point of admission to the colleges.

Appendix Table B.1 shows demographic characteristics of the randomized sample across the eight colleges that provided student-level baseline data.

Appendix Table B.2 shows that at Dallas College, 66 percent of the sample would have been placed in college-level courses under either placement criteria in English and 60 percent in math, while 18 percent of the sample would have been placed in developmental or corequisite courses under either placement criteria in English and 4 percent in math. The remaining students make up the analysis sample of students affected by the intervention: 589 students in the bump zones in English, and 1,637 in math, making the analysis sample big enough for statistical inference. There are some unusual imbalances in the number of students in these zones across research groups, indicating that the analysis sample may not be fully experimental at this college. However, it is questionable whether this could have substantively affected the conclusions drawn from this analysis. This question is explored in more depth in the Texas Multiple Measures Assessment Randomized Controlled Trial report.

Appendix Table B.3 shows that at Front Range Community College, 55 percent of the sample would have been placed in college-level courses under either placement criteria in English and 27 percent in math, while 27 percent of the sample would have been placed in developmental courses under either placement criteria in English and 55 percent in math. The remaining students would make up the analysis sample of students affected by the intervention, but there are only two students in the English bump-up zone and two in the math bump-down zone, making the analysis sample too small for statistical inference.

Appendix Table B.1. Baseline Characteristics for the Full Sample, by College

Characteristic	Dallas	Front Range	Houston City	North Arkansas	Northeastern Junior	Northern Virginia	Passaic County	SUNY Westchester
Gender (%)								
Female	55.7	59.9	41.9	45.1	44.7	46.7	59.0	51.5
Male	44.3	40.1	28.8	54.9	38.3	50.0	40.8	48.4
Missing	0.0	0.0	29.2	0.0	17.0	3.2	0.3	0.1
Age								
Average Age	20	25	25	22	20	20	21	21
Race/ethnicity (%)								
Hispanic/Latino	61.1	33.5	26.4	11.6	23.4	30.2	57.9	51.3
White	10.1	52.4	8.5	75.1	54.3	31.1	7.7	19.6
Black or African American	17.8	3.1	24.9	6.4	1.1	17.7	11.8	22.3
None of the above[a]	6.1	8.4	8.6	6.4	4.3	17.0	3.6	5.0
Missing	4.9	2.6	31.5	0.6	17.0	4.0	18.9	1.8
Admission type (%)								
First-time college student	81.6	64.8	41.4	78.6	59.6	0.0	0.0	75.4
Transfer student	5.2	21.6	52.1	11.6	9.6	0.0	0.0	22.6
Other[b]	13.2	12.3	6.4	9.8	13.8	0.0	0.0	1.9
Missing	0.0	1.3	0.0	0.0	17.0	100.0	100.0	0.0
Pell status (%)								
Pell eligible/received	63.1	19.8	37.0	74.0	42.6	6.1	0.0	40.2
Pell not eligible/not received	36.9	9.7	33.8	26.0	21.3	93.9	0.0	59.8
Missing	0.0	70.5	29.2	0.0	36.2	0.0	100.0	0.0
High school GPA								
Average GPA[c]	3.0	N/A	3.1	3.0	3.0	3.1	N/A	2.7
Sample size (total = 23,380)	7,001	227	10,333	173	94	2,550	1,455	1,547

(continued)

Appendix Table B.1 (continued)

SOURCE: MDRC calculations using baseline information and placement survey data provided by the study colleges.

NOTES: Rounding may cause slight discrepancies in sums and differences.
Sample sizes may vary by characteristic because of missing values.
N/A = Not available.
[a]"None of the above" includes students identifying as Asian, Pacific Islander, Native Hawaiian, American Indian, Alaskan Native, or multiracial.
[b]"Other" admission type includes international students, continuing students, returning/readmitted students, non-degree students, temporary/transient students, GED completers, online students, and high school concurrent students.
[c]At three sites (Dallas, Houston City, and SUNY Westchester), a group of students had high school grade point averages reported on a 0-100 scale. These values were converted to a standardized 0-4 scale for consistency across sites.

Appendix Table B.2. Dallas College

Zone	Program Group		Control Group		All	
	Percentage of students	Number of Students	Percentage of students	Number of Students	Percentage of students	Number of Students
Students in Zones in English						
Always placed in college-level courses[a]	65.2	2,294	66.7	2,321	65.9	4,615
Bumped up to college-level courses by MMA	10.0	351	6.8	238	8.4	589
Bumped down to developmental or corequisite courses by MMA	0.0	0	0.0	0	0.0	0
Always placed in developmental or corequisite courses	17.2	604	19.0	660	18.1	1,264
Missing[b]	7.7	271	7.5	262	7.6	533
Sample size		3,520		3,481		7,001
Students in Zones in Math						
Always placed in college-level courses[a]	59.3	2,086	61.6	2,146	60.4	4,232
Bumped up to college-level courses by MMA	25.0	879	21.8	758	23.4	1,637
Bumped down to developmental or corequisite courses by MMA	0.0	0	0.0	0	0.0	0
Always placed in developmental or corequisite courses	4.2	148	4.5	158	4.4	306
Missing[b]	11.6	407	12.0	419	11.8	826
Sample size		3,520		3,481		7,001

SOURCE: Placement data provided by Dallas College.

NOTES: MMA refers to multiple measures assessment.
Rounding may cause slight discrepancies in sums and differences.
[a]This category includes those exempt from testing at Dallas College.
[b]This category refers to students for whom a placement could not be determined due to incomplete data.

Appendix Table B.3. Front Range Community College

Zone	Program Group		Control Group		All	
	Percentage of Students	Number of Students	Percentage of Students	Number of Students	Percentage of Students	Number of Students
Students in Zones in English						
Always placed in college-level courses	60.0	3	50.0	3	54.5	6
Bumped up to college-level courses by MMA	40.0	2	0.0	0	18.2	2
Bumped down to developmental or corequisite courses by MMA	0.0	0	0,0	0	0.0	0
Always placed in developmental or corequisite courses	0.0	0	50.0	3	27.3	3
Sample size		5		6		11
Students in Zones in Math						
Always placed in college-level courses	40.0	2	16.7	1	27.3	3
Bumped up to college-level courses by MMA	0.0	0	0.0	0	0.0	0
Bumped down to developmental or corequisite courses by MMA	20.0	1	16.7	1	18.2	2
Always placed in developmental or corequisite courses	40.0	2	66.7	4	54.5	6
Sample size		5		6		11

SOURCE: Placement data provided by Front Range Community College.

NOTE: MMA refers to multiple measures assessment. Rounding may cause slight discrepancies in sums and differences. Among students who enrolled in the fall 2024 semester and were randomly assigned, about 87 percent did not go through the placement process.

Appendix Table B.4 shows that at Houston City College, 10 percent of the sample would have been placed in college-level courses under either placement criteria in English with an additional 76 percent exempt or not completing the placement process. Some 10 percent would have been placed in college-level courses under either placement criteria in math with an additional 72 percent exempt or not completing the placement process. Some 5 percent of the sample would have been placed in developmental or corequisite courses under either placement criteria in English and 5 percent in math. The remaining students make up the analysis sample of students affected by the intervention: 969 students in the bump zones in English, and 1,361 in math, making the analysis sample big enough for statistical inference. There are no unusual imbalances in the number of students in these zones across research groups, indicating that the analysis sample is experimental at this college.

Appendix Table B.5 shows that at North Arkansas College, 39 percent of the sample would have been placed in college-level courses under either placement criteria in English and 30 percent would have been placed in college-level courses in math, while 41 percent of the sample would have been placed in developmental or corequisite courses under either placement criteria in English and 67 percent in math. The remaining students would make up the analysis sample of students affected by the intervention but for two issues. There are only 35 students in the bump zone in English and 6 in math, making the analysis sample too small for statistical inference. There are also significant imbalances in the number of students in these zones across research groups, indicating that the experiment may have been compromised at this college.

Appendix Table B.6 shows that at Northeastern Junior College, 93 percent of the sample would have been placed in college-level courses under either placement criteria in English and 67 percent in math, while 2 percent of the sample would have been placed in developmental courses under either placement criteria in English and 8 percent in math. The remaining students would make up the analysis sample of students affected by the intervention but for two issues. There are only 3 students in the bump zones in English, and only 13 in math, making the analysis sample too small for statistical inference. Concerningly, there are also significant imbalances in the number of students in these zones across research groups, indicating that the experiment may have been compromised at this college.

Appendix Table B.7 shows that at Northern Virginia Community College, 50 percent of the sample would have been placed in college-level courses under either placement criteria in English. The remaining students make up the analysis sample of students affected by the intervention: 742 students in the bump zones in English, making the analysis sample big enough for statistical inference. There are no unusual imbalances in the number of students in these zones across research groups, indicating that the analysis sample is experimental at this college.

Appendix Table B.8 shows that at SUNY Westchester Community College, 56 percent of the sample would have been placed in college-level courses under either placement criteria in English and 47 percent in math, while 28 percent of the sample would have been placed in developmental or corequisite courses under either placement criteria in English and 43

Appendix Table B.4. Houston City College

Zone	Program Group		Control Group		All	
	Percentage of Students	Number of Students	Percentage of Students	Number of Students	Percentage of Students	Number of Students
Students in Zones in English						
Always placed in college-level courses	9.7	500	10.3	537	10.0	1,037
Bumped up to college-level courses by MMA	9.5	488	9.2	481	9.4	969
Bumped down to developmental or corequisite courses by MMA	0.0	0	0.0	0	0.0	0
Always placed in developmental or corequisite courses	4.1	211	5.1	265	4.6	476
Missing[a]	76.6	3,934	75.3	3,917	76.0	7,851
Sample size		5,133		5,200		10,333
Students in Zones in Math						
Always placed in college-level courses	10.4	536	10.2	530	10.3	1,066
Bumped up to college-level courses by MMA	13.0	667	13.3	694	13.2	1,361
Bumped down to developmental or corequisite courses by MMA	0.0	0	0.0	0	0.0	0
Always placed in developmental or corequisite courses	4.3	222	4.8	249	4.6	471
Missing[a]	72.2	3,708	71.7	3,727	72.0	7,435
Sample size		5,133		5,200		10,333

SOURCE: Placement data provided by Houston City College.

NOTES: MMA refers to multiple measures assessment.
Rounding may cause slight discrepancies in sums and differences.
[a]These students largely did not complete placement tests, indicating they were exempt from placement and able to enroll in college-level courses, or they did not enroll in the fall 2024 semester.

Appendix Table B.5. North Arkansas College

Zone	Program Group		Control Group		All	
	Percentage of Students	Number of Students	Percentage of Students	Number of Students	Percentage of Students	Number of Students
Students in Zones in English						
Always placed in college-level courses	38.4	48	39.6	19	38.7	67
Bumped up to college-level courses by MMA	25.6	32	6.3	3	20.2	35
Bumped down to developmental or corequisite courses by MMA	0.0	0	0.0	0	0.0	0
Always placed in developmental or corequisite courses	36.0	45	54.2	26	41.0	71
Sample size		125		48		173
Students in Zones in Math						
Always placed in college-level courses	32.0	40	22.9	11	29.5	51
Bumped up to college-level courses by MMA	4.8	6	0.0	0	3.5	6
Bumped down to developmental or corequisite courses by MMA	0.0	0	0.0	0	0.0	0
Always placed in developmental or corequisite courses	63.2	79	77.1	37	67.1	116
Sample size		125		48		173

SOURCE: Placement data provided by North Arkansas College.

NOTE: MMA refers to multiple measures assessment. Rounding may cause slight discrepancies in sums and differences.

Appendix Table B.6. Northeastern Junior College

Zone	Program Group		Control Group		All	
	Percentage of Students	Number of Students	Percentage of Students	Number of Students	Percentage of Students	Number of Students
Students in Zones in English						
Always placed in college-level courses	100.0	19	88.2	30	92.5	49
Bumped up to college-level courses by MMA	0.0	0	8.8	3	5.7	3
Bumped down to developmental or corequisite courses by MMA	0.0	0	0.0	0	0.0	0
Always placed in developmental or corequisite courses	0.0	0	2.9	1	1.9	1
Sample size		19		34		53
Students in Zones in Math						
Always placed in college-level courses	78.9	15	59.4	19	66.7	34
Bumped up to college-level courses by MMA	15.8	3	31.3	10	25.5	13
Bumped down to developmental or corequisite courses by MMA	0.0	0	0.0	0	0.0	0
Always placed in developmental or corequisite courses	5.3	1	9.4	3	7.8	4
Sample size		19		32		51

SOURCE: Placement data provided by Northeastern Junior College.

NOTES: MMA refers to Multiple Measures Assessment. Rounding may cause slight discrepancies in sums and differences. The math table includes students who went through either Algebra or Statistics placement. Some 19 percent of students were missing placement information.

Appendix Table B.7. Northern Virginia Community College

Zone	Program Group		Control Group		All	
	Percentage of Students	Number of Students	Percentage of Students	Number of Students	Percentage of Students	Number of Students
Students in Zones in English						
Always placed in college-level courses	49.3	622	50.2	646	49.7	1,268
Bumped up to college-level courses by MMA	29.0	366	29.2	376	29.1	742
Bumped down to developmental or corequisite courses by MMA	0.9	11	0.5	7	0.7	18
Always placed in developmental or corequisite courses	5.4	68	5.0	64	5.2	132
Missing[a]	15.4	195	15.1	195	15.3	390
Sample size		1,262		1,288		2,550

SOURCE: Placement data provided by Northern Virginia Community College.

NOTE: MMA refers to multiple measures assessment.
Rounding may cause slight discrepancies in sums and differences.
[a]This category refers to students for whom a placement could not be determined due to incomplete data.

Appendix Table B.8. SUNY Westchester Community College

Zone	Program Group		Control Group		All	
	Percentage of Students	Number of Students	Percentage of Students	Number of Students	Percentage of Students	Number of Students
Students in Zones in English						
Always placed in college-level courses	52.8	405	58.7	458	55.8	863
Bumped up to college-level courses by MMA	2.5	19	3.2	25	2.8	44
Bumped down to developmental or corequisite courses by MMA	5.3	41	5.5	43	5.4	84
Always placed in developmental or corequisite courses	31.0	238	25.6	200	28.3	438
Missing[a]	8.3	64	6.9	54	7.6	118
Sample size		767		780		1,547
Students in Zones in Math						
Always placed in college-level courses	43.8	336	49.2	384	46.5	720
Bumped up to college-level courses by MMA	2.0	15	2.1	16	2.0	31
Bumped down to developmental or corequisite courses by MMA	7.8	60	6.0	47	6.9	107
Always placed in developmental or corequisite courses	44.7	343	41.7	325	43.2	668
Missing[a]	1.7	13	1.0	8	1.4	21
Sample size		767		780		1,547

SOURCE: Placement data provided by SUNY Westchester Community College.

NOTE: MMA refers to multiple measures assessment. Rounding may cause slight discrepancies in sums and differences.
[a]This category refers to students for whom a placement could not be determined due to incomplete data.

percent in math. The remaining students make up the analysis sample of students affected by the intervention: 128 students in the bump zones in English, and 138 in math, making the analysis sample big enough for statistical inference. There are no unusual imbalances in the number of students in these zones across research groups.

Passaic County Community College did not provide student-level placement or outcome data.

Due to extremely small numbers of students (in most cases single digits in each group) falling into the bump zones at three colleges, and no data submitted from a fourth college, only Dallas, Houston City, Northern Virginia, and SUNY Westchester Community Colleges had viable sample sizes for an impact analysis. The limited number of sites and the issues with experimental fidelity make these findings less generalizable than originally planned. Appendix Tables B.9 through B.13 show the analysis sample and full sample impacts at SUNY Westchester Community College and Northern Virginia Community College in each subject. Specific impacts for Dallas College and Houston City College are covered in the concurrent Texas Multiple Measures Assessment Randomized Controlled Trial report. However, the main focus of this report is the pooled analysis sample of all four colleges, shown in Tables 4.2 and 4.3, and explained in the main text.

Appendix Table B.9. Academic Outcomes After One Semester Among SUNY Westchester Students in the English Analytic Sample

Outcome	College-Level Group	Developmental Group	Impact Estimate	95% Confidence Interval		P-Value
				Lower Bound	Upper Bound	
English course enrollment (%)						
College-level course	61.3	51.8	9.5	-10.2	29.2	0.322
Stand-alone course	62.3	-2.1	64.4 ***	49.7	79.1	0.000
Corequisite course	-1.0	53.9	-54.9 ***	-67.8	-42.0	0.000
Prerequisite course	0.0	0.0	0.0	0.0	0.0	
Did not enroll	38.7	48.2	-9.5	-29.2	10.2	0.322
English course completion (%)						
College-level course	27.3	36.2	-9.0	-27.0	9.0	0.344
Stand-alone course	28.8	-0.8	29.6 ***	16.3	42.8	0.000
While enrolled in a corequisite course	-1.5	37.0	-38.5 ***	-50.9	-26.1	0.000
Prerequisite course	0.0	0.0	0.0	0.0	0.0	
Did not enroll or complete	72.7	63.8	9.0	-9.0	27.0	0.344
All subjects						
Enrolled (%)	79.1	82.2	-3.2	-19.1	12.8	0.682
Total credits attempted	9.21	10.12	-0.91	-3.30	1.49	0.434
College-level	8.38	7.36	1.02	-1.01	3.05	0.297
Math	0.99	1.18	-0.19	-0.86	0.48	0.604
English	1.84	1.55	0.29	-0.30	0.88	0.322
Other	5.55	4.63	0.92	-0.60	2.45	0.202
Developmental	0.83	2.76	-1.93 ***	-2.70	-1.15	0.000
Math	0.85	1.68	-0.83 ***	-1.47	-0.19	0.009
English	-0.02	1.08	-1.10 ***	-1.36	-0.84	0.000
Total credits earned	3.98	4.08	-0.10	-1.90	1.70	0.913
College-level	3.88	3.71	0.17	-1.53	1.86	0.848
Math	0.43	0.47	-0.04	-0.51	0.42	0.878
English	0.82	1.09	-0.27	-0.81	0.27	0.344
Other	2.63	2.16	0.48	-0.77	1.72	0.443
Developmental	0.10	0.37	-0.27	-0.63	0.10	0.133
Math	0.10	0.37	-0.27	-0.63	0.10	0.133
English	0.00	0.00	0.00	0.00	0.00	
Sample size (total = 128)	71	57				

SOURCE: MDRC calculations using transcript data from SUNY Westchester Community College.

NOTES: Rounding may cause slight discrepancies in sums and differences.

Distributions may not add to 100 percent because categories are not mutually exclusive.

The p-value indicates the likelihood that the estimated impact (or larger) would have been generated by an intervention with zero true effect. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

Estimates are adjusted by gender, race/ethnicity, and grade point average. These adjustments may result in negative adjusted means.

Appendix Table B.10. Academic Outcomes After One Semester Among SUNY Westchester Students in the Math Analytic Sample

Outcome	College-Level Group	Developmental Group	Impact Estimate	95% Confidence Interval		P-Value
				Lower Bound	Upper Bound	
Math course enrollment (%)						
College-level course	51.2	16.4	34.8 ***	19.8	49.9	0.000
Stand-alone course	48.3	3.2	45.1 ***	32.3	57.9	0.000
Corequisite course	2.9	13.2	-10.3 **	-19.1	-1.5	0.019
Prerequisite course	0.4	34.8	-34.4 ***	-45.6	-23.2	0.000
Did not enroll	48.3	48.8	-0.4	-16.5	15.6	0.960
Math course completion (%)						
College-level course	18.8	13.0	5.8	-6.8	18.3	0.415
Stand-alone course	16.5	2.1	14.4 **	4.4	24.4	0.019
While enrolled in a corequisite course	2.3	10.9	-8.6 **	-16.8	-0.4	0.042
Prerequisite course	0.0	10.3	-10.4 **	-17.7	-3.0	0.013
Did not enroll or complete	81.2	76.7	4.6	-9.4	18.6	0.563
All subjects						
Enrolled (%)	75.3	68.1	7.3	-7.8	22.3	0.357
Total credits attempted	9.23	7.85	1.37	-0.62	3.37	0.205
College-level	8.92	5.87	3.05 ***	1.18	4.91	0.003
Math	1.87	0.51	1.36 ***	0.83	1.89	0.000
English	1.76	1.45	0.30	-0.18	0.79	0.247
Other	5.30	3.91	1.38 **	0.09	2.68	0.043
Developmental	0.30	1.98	-1.68 ***	-2.21	-1.14	0.000
Math	0.08	1.66	-1.58 ***	-2.01	-1.16	0.000
English	0.23	0.32	-0.09	-0.34	0.16	0.475
Total credits earned	4.30	3.76	0.54	-1.15	2.23	0.549
College-level	4.26	3.36	0.90	-0.76	2.56	0.311
Math	0.65	0.40	0.25	-0.17	0.67	0.311
English	0.76	0.85	-0.09	-0.55	0.37	0.721
Other	2.84	2.10	0.74	-0.42	1.89	0.203
Developmental	0.04	0.41	-0.36 **	-0.67	-0.06	0.037
Math	0.00	0.41	-0.41 **	-0.71	-0.12	0.013
English	0.05	0.00	0.05	-0.04	0.14	0.330
Sample size (total = 138)	70	68				

SOURCE: MDRC calculations using transcript data from SUNY Westchester Community College.

NOTES: Rounding may cause slight discrepancies in sums and differences.

Distributions may not add to 100 percent because categories are not mutually exclusive.

The p-value indicates the likelihood that the estimated impact (or larger) would have been generated by an intervention with zero true effect. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

Estimates are adjusted by gender, race/ethnicity, and grade point average. These adjustments may result in negative adjusted means.

Appendix Table B.11. Academic Outcomes After One Semester Among Northern Virginia Students in the English Analytic Sample

Outcome	College-Level Group	Developmental Group	Impact Estimate	95% Confidence Interval		P-Value
				Lower Bound	Upper Bound	
English course enrollment (%)						
College-level course	30.7	19.0	11.7 ***	5.6	17.8	0.000
Stand-alone course	23.5	8.4	15.0 ***	9.9	20.1	0.000
Corequisite course	7.0	10.6	-3.6 *	-7.7	0.4	0.083
Prerequisite course	1.6	2.4	-0.8	-2.8	1.2	0.417
Did not enroll	68.0	78.6	-10.6 ***	-16.9	-4.3	0.001
English course completion (%)						
College-level course	17.1	12.5	4.6 *	-0.4	9.7	0.072
Stand-alone course	13.1	5.2	7.9 ***	3.8	12.0	0.000
While enrolled in a corequisite course	3.7	7.3	-3.5 **	-6.7	-0.3	0.038
Prerequisite course	0.8	1.6	-0.8	-2.3	0.8	0.333
Did not enroll or complete	82.4	86.0	-3.6	-8.8	1.6	0.176
All subjects						
Enrolled (%)	55.8	55.3	0.5	-6.6	7.6	0.888
Total credits attempted	5.20	5.05	0.15	-0.63	0.93	0.707
College-level	4.68	4.31	0.38	-0.32	1.07	0.291
Math	0.35	0.51	-0.16 *	-0.32	0.00	0.053
English	0.92	0.57	0.35 ***	0.17	0.53	0.000
Other	3.41	3.23	0.18	-0.37	0.74	0.519
Developmental	0.52	0.74	-0.22 **	-0.44	-0.01	0.038
Math	0.25	0.34	-0.09	-0.22	0.04	0.175
English	0.26	0.40	-0.14 **	-0.27	-0.01	0.042
Total credits earned	2.92	3.08	-0.16	-0.79	0.47	0.621
College-level	2.67	2.60	0.07	-0.49	0.63	0.797
Math	0.12	0.32	-0.20 ***	-0.32	-0.07	0.002
English	0.51	0.37	0.14 *	-0.01	0.29	0.072
Other	2.04	1.91	0.13	-0.31	0.57	0.567
Developmental	0.25	0.48	-0.23 ***	-0.39	-0.07	0.005
Math	0.11	0.21	-0.09 *	-0.19	0.00	0.060
English	0.13	0.27	-0.14 **	-0.25	-0.03	0.014
Sample size (total = 760)	373	387				

SOURCE: MDRC calculations using transcript data from Northern Virginia Community College.

NOTES: Rounding may cause slight discrepancies in sums and differences.

Distributions may not add to 100 percent because categories are not mutually exclusive.

The p-value indicates the likelihood that the estimated impact (or larger) would have been generated by an intervention with zero true effect. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

Estimates are adjusted by gender, race/ethnicity, and grade point average. These adjustments may result in negative adjusted means.

Appendix Table B.12. Academic Outcomes After One Semester Among Students in the Full SUNY Westchester Sample

Outcome	Program Group	Control Group	Impact Estimate	95% Confidence Interval		P-Value
				Lower Bound	Upper Bound	
Math course enrollment (%)						
College-level course	36.8	37.2	-0.4	-5.1	4.3	0.867
Stand-alone course	27.1	30.5	-3.4	-7.7	0.9	0.117
Corequisite course	9.7	6.7	3.0 **	0.3	5.7	0.027
Prerequisite course	13.2	11.1	2.1	-1.0	5.3	0.188
Did not enroll	49.9	51.7	-1.7	-6.6	3.2	0.494
Math course completion (%)						
College-level course	18.4	18.9	-0.5	-4.4	3.4	0.804
Stand-alone course	13.6	14.8	-1.2	-4.6	2.2	0.471
While enrolled in a corequisite course	4.8	4.1	0.8	-1.3	2.8	0.463
Prerequisite course	3.9	3.7	0.2	-1.7	2.1	0.810
Did not enroll or complete	77.6	77.4	0.3	-3.9	4.4	0.904
English course enrollment (%)						
College-level course	54.6	57.2	-2.7	-7.5	2.2	0.281
Stand-alone course	42.7	47.5	-4.7 *	-9.5	0.1	0.054
Corequisite course	11.8	9.7	2.2	-0.8	5.1	0.149
Prerequisite course	1.0	0.8	0.3	-0.7	1.2	0.584
Did not enroll	44.4	42.1	2.3	-2.6	7.1	0.354
English course completion (%)						
College-level course	30.5	35.5	-5.0 **	-9.6	-0.3	0.036
Stand-alone course	24.8	30.5	-5.7 ***	-10.1	-1.4	0.010
While enrolled in a corequisite course	5.8	5.0	0.8	-1.4	3.0	0.487
Prerequisite course	0.7	0.5	0.2	-0.6	0.9	0.696
Did not enroll or complete	68.81	64.00	4.81 **	0.14	9.48	0.044
All subjects						
Enrolled (%)	77.8	76.2	1.6	-2.6	5.7	0.462
Total credits attempted	9.43	9.30	0.13	-0.46	0.71	0.673
College-level	8.43	8.50	-0.07	-0.62	0.48	0.801
Math	1.32	1.33	-0.01	-0.19	0.16	0.885
English	1.64	1.72	-0.08	-0.23	0.06	0.259
Other	5.47	5.45	0.03	-0.38	0.43	0.899
Developmental	0.99	0.80	0.20 **	0.04	0.36	0.016
Math	0.73	0.58	0.15 **	0.02	0.28	0.027
English	0.27	0.22	0.05	-0.01	0.12	0.116

(continued)

Appendix Table B.12 (continued)

Outcome	Program Group	Control Group	Impact Estimate	95% Confidence Interval		P-Value
				Lower Bound	Upper Bound	
Total credits earned	5.02	5.34	-0.32	-0.84	0.19	0.220
College-level	4.84	5.18	-0.34	-0.84	0.17	0.189
Math	0.66	0.67	-0.01	-0.15	0.13	0.911
English	0.92	1.06	-0.15 **	-0.29	-0.01	0.036
Other	3.27	3.44	-0.18	-0.54	0.19	0.339
Developmental	0.18	0.16	0.01	-0.07	0.09	0.731
Math	0.2	0.1	0.0	-0.1	0.1	0.810
English	0.0	0.0	0.0	0.0	0.0	0.696
Sample size (total = 1,547)	767	780				

SOURCE: MDRC calculations using transcript data from SUNY Westchester Community College.

NOTES: Rounding may cause slight discrepancies in sums and differences.
Distributions may not add to 100 percent because categories are not mutually exclusive.
The p-value indicates the likelihood that the estimated impact (or larger) would have been generated by an intervention with zero true effect. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.
Estimates are adjusted by gender, race/ethnicity, and grade point average. These adjustments may result in negative adjusted means.

Appendix Table B.13. Academic Outcomes After One Semester Among Students in the Full Northern Virginia Sample

Outcome	Program Group	Control Group	Impact Estimate	95% Confidence Interval		P-Value
				Lower Bound	Upper Bound	
Math course enrollment (%)						
College-level course	16.7	17.6	-0.8	-3.8	2.1	0.572
Stand-alone course	14.8	15.1	-0.3	-3.0	2.5	0.846
Corequisite course	1.3	1.2	0.1	-0.8	1.0	0.799
Prerequisite course	2.9	3.9	-0.9	-2.3	0.5	0.200
Did not enroll	80.9	79.9	1.1	-2.0	4.2	0.492
Math course completion (%)						
College-level course	8.7	10.2	-1.4	-3.7	0.8	0.213
Stand-alone course	7.9	8.5	-0.6	-2.8	1.5	0.553
While enrolled in a corequisite course	0.4	0.6	-0.2	-0.8	0.3	0.382
Prerequisite course	1.5	2.1	-0.7	-1.7	0.4	0.199
Did not enroll or complete	90.2	88.5	1.7	-0.7	4.1	0.157
English course enrollment (%)						
College-level course	27.3	22.0	5.3 ***	2.0	8.7	0.002
Stand-alone course	24.0	17.3	6.7 ***	3.5	9.8	0.000
Corequisite course	3.2	4.7	-1.5 **	-3.0	0.0	0.048
Prerequisite course	1.0	1.2	-0.3	-1.1	0.5	0.476
Did not enroll	71.9	76.8	-4.9 ***	-8.3	-1.5	0.005
English course completion (%)						
College-level course	18.3	14.8	3.5 **	0.6	6.4	0.017
Stand-alone course	16.4	11.9	4.5 ***	1.8	7.2	0.001
While enrolled in a corequisite course	1.8	2.9	-1.1 *	-2.3	0.1	0.075
Prerequisite course	0.4	0.7	-0.3	-0.9	0.3	0.297
Did not enroll or complete	81.4	84.5	-3.1 **	-6.1	-0.2	0.036
All subjects						
Enrolled (%)	55.5	55.0	0.5	-3.3	4.4	0.790
Total credits attempted	4.98	4.97	0.01	-0.42	0.43	0.975
College-level	4.73	4.64	0.09	-0.32	0.50	0.664
Math	0.58	0.60	-0.02	-0.12	0.08	0.725
English	0.82	0.66	0.16 ***	0.06	0.26	0.002
Other	3.33	3.38	-0.05	-0.36	0.26	0.761
Developmental	0.25	0.34	-0.08 **	-0.17	0.00	0.046
Math	0.13	0.15	-0.02	-0.07	0.02	0.333
English	0.12	0.18	-0.06 **	-0.11	-0.01	0.023

(continued)

Appendix Table B.13 (continued)

Outcome	Program Group	Control Group	Impact Estimate	95% Confidence Interval		P-Value
				Lower Bound	Upper Bound	
Total credits earned	3.34	3.31	0.03	-0.33	0.39	0.871
College-level	3.21	3.10	0.11	-0.23	0.45	0.532
Math	0.29	0.34	-0.05	-0.13	0.03	0.215
English	0.55	0.44	0.11 **	0.02	0.19	0.017
Other	2.37	2.32	0.05	-0.21	0.32	0.694
Developmental	0.13	0.21	-0.08 ***	-0.14	-0.02	0.010
Math	0.1	0.1	0.0	-0.1	0.0	0.115
English	0.1	0.1	0.0 **	-0.1	0.0	0.017
Sample size (total = 2,550)	1,262	1,288				

SOURCE: MDRC calculations using transcript data from Northern Virginia Community College.

NOTES: Rounding may cause slight discrepancies in sums and differences.
Distributions may not add to 100 percent because categories are not mutually exclusive.
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Estimates are adjusted by gender, race/ethnicity, and grade point average. These adjustments may result in negative adjusted means.

APPENDIX

C

Implementation Research Data Sources and Methodology

PLACEMENT MAPS

To better understand both the original and study placement designs used across the eight colleges, MDRC researchers collaborated with college staff members to create placement maps. These maps outlined the specific measures and cutoff scores for each original and study placement policy. To develop this report, researchers used these maps as a reference.

COLLEGE STAFF MEMBER FOCUS GROUPS

MDRC's research team conducted 31 in-person focus groups at the eight colleges during the fall 2024 semester. At each college, MDRC researchers facilitated discussions with four distinct focus groups — one with math faculty members, one with English faculty members, one with advisers and one with placement staff members.[1] These groups were selected because of their on-the-ground knowledge of the subject. If staff members integral to the development and implementation of the study were unable to attend the in-person focus group sessions, additional interviews were conducted remotely via video.

To identify interviewees, the research team collaborated with their main college contact to determine which individuals could best speak to the design and implementation of the trial placement system and to determine which individuals could best speak to the corequisite model design and implementation process. After conducting the focus groups, MDRC researchers compiled and analyzed the transcripts to identify common themes across the eight colleges. They focused on participants' positive and negative perceptions of placement policies and developmental education and the participants' positive and negative perceptions of corequisite models. These insights helped MDRC better understand the factors that supported or hindered the implementation of the study placement policy and the factors that supported or hindered the implementation of corequisite courses.

COLLEGE WEBSITES AND INFORMAL CONVERSATIONS

To better understand the structure and content of corequisite courses across the colleges, MDRC researchers utilized information readily available on the respective colleges' websites and conversations with math and English faculty members from each of the eight institutions. These informal conversations were used to verify information gathered from the online course catalog, such as the type of corequisite course, number of credits, instructional mode, and course composition. Additionally, the research team gained further insight into how frequently the course is offered and whether it is taught by one instructor or multiple instructors across the corequisite and college-level sections.

1. No focus groups with math faculty members were conducted at Northern Virginia Community College. This college only made changes to its English placement policy and did not modify math placement.

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ABOUT MDRC

MDRC, a nonprofit, nonpartisan social and education policy research organization, is committed to finding solutions to some of the most difficult problems facing the nation. We aim to reduce poverty and bolster economic mobility; improve early child development, public education, and pathways from high school to college completion and careers; and reduce inequities in the criminal justice system. Our partners include public agencies and school systems, nonprofit and community-based organizations, private philanthropies, and others who are creating opportunity for individuals, families, and communities.

Founded in 1974, MDRC builds and applies evidence about changes in policy and practice that can improve the well-being of people who are economically disadvantaged. In service of this goal, we work alongside our programmatic partners and the people they serve to identify and design more effective and equitable approaches. We work with them to strengthen the impact of those approaches. And we work with them to evaluate policies or practices using the highest research standards. Our staff members have an unusual combination of research and organizational experience, with expertise in the latest qualitative and quantitative research methods, data science, behavioral science, culturally responsive practices, and collaborative design and program improvement processes. To disseminate what we learn, we actively engage with policymakers, practitioners, public and private funders, and others to apply the best evidence available to the decisions they are making.

MDRC works in almost every state and all the nation's largest cities, with offices in New York City; Oakland, California; and Washington, DC.