The Effects of Learning Communities for Students in Developmental Education

A Synthesis of Findings from Six Community Colleges

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Overview

Every year, hundreds of thousands of students enroll at their local community college to earn a degree or credential. Their first step upon entering college is to take placement exams in English and mathematics to determine their readiness to handle college-level courses. Because their scores on these tests are low, over half of entering community college students are referred to remedial, or developmental, courses. Most do not complete the sequence of remedial courses or earn a credential.

Many community colleges are turning to learning communities as an intervention to improve the outcomes of developmental education students. In learning communities, small cohorts of students are placed together in two or more courses for one semester, usually in the freshman year. The idea behind these communities is that students will be more likely to form stronger relationships with each other and their instructors and engage more deeply in the content of the integrated course work, and that this will give them a better chance of passing their courses and staying in college.

In 2006, the National Center for Postsecondary Research, of which is MDRC is a partner, launched a demonstration of one-semester learning community programs at six colleges; five of these programs focused on developmental education. This is the final report from the project and includes findings from analyses that pool data across these five programs as well as the results for developmental education students at a sixth program at Kingsborough Community College, operated earlier under the Opening Doors demonstration. Across the six programs, almost 7,000 students were randomly assigned, about half into 174 learning communities, and tracked for three semesters. Key findings suggest that when compared with business as usual, one-semester learning communities in developmental education, on average, lead to:

- A modest (half-credit) estimated impact on credits earned in the targeted subject (English or mathematics) but no impact on credits earned outside the targeted subject.
- A modest (half-credit) estimated impact on total credits earned.
- No impact on persistence in college.

The developmental education students in the Kingsborough program, which had some different features from the other five programs, including enhanced support services, showed somewhat larger results than the other sites in credits earned in the targeted subject.

An MDRC report on the overall Kingsborough learning communities program, which served both developmental and college-ready students, shows a positive impact on degree attainment after six years. The graduation effect was driven primarily by students who had placed into college-level English, although there is also evidence that the program had a positive impact on long-term outcomes for students with the greatest developmental needs in English. Together, these evaluations suggest that, while most typical one-semester learning communities for developmental education students are not likely to lead to large effects on students’ outcomes, a program with additional supports can have longer-term impacts for developmental students.
Preface

Only about a third of the students who enroll in community colleges hoping to earn a degree or credential achieve their goal within six years. For those who are not academically prepared for college and must take developmental, or remedial, courses in reading, writing, or math, even fewer succeed. Many never pass all the required remedial courses and end up leaving school without a diploma or certificate. Learning communities are a popular instructional reform community colleges are implementing to help developmental education students overcome this barrier to finishing college. In developmental education learning communities, small cohorts of students are placed together in two or more thematically linked courses, including a developmental course, usually for one semester. The theory is that the relationships students form with each other and their instructors and the connections between their linked courses will enhance their engagement with school and their mastery of the subject matter, and that they will be more likely to complete their sequence of developmental courses, stay in college, and graduate.

Recognizing the need for more research on the effectiveness of learning communities, the National Center for Postsecondary Research (NCPR), of which MDRC is a partner, launched the Learning Communities Demonstration in 2006 to evaluate one-semester learning communities at six colleges; five of these learning community programs focused on developmental education students. Site-specific reports on the effects of the programs at all of the colleges are available at www.mdrc.org. This final report on the demonstration analyzes pooled data from the five colleges whose programs involved developmental education students and also includes developmental students at a sixth program at Kingsborough Community College, which was part of MDRC’s earlier Opening Doors demonstration. These six programs represent a range of learning community programs at community colleges.

After one program semester, the study found that, on average, there was a positive but small impact (half a credit) on credits earned in the target subject (English or math), no impact on credits earned in other courses, and a half-credit effect on total credits earned. There were no effects on semester-to-semester persistence. The programs’ positive impacts during the program semester did not grow but were maintained through two postprogram semesters.

Kingsborough’s program, which linked three courses and offered enhanced counseling and tutoring, textbook vouchers, and encouragement to earn more credits in a six-week intersession, produced an impact on credits earned in the targeted subject (English) that was one credit larger than the pooled average. An MDRC report on the six-year follow-up results of Kingsborough’s Opening Doors Learning Communities program (which served both developmental and college-ready students) found evidence of an effect on graduation rates, although this was
driven primarily by students who placed into college-level English. Developmental education students with the greatest deficits in English may also have benefited.

Overall, the analysis in this report reinforces the key findings presented in the previously published site-specific reports. On average, one-semester learning communities as typically operated for developmental education students should not be expected to produce more than a modest impact on credits earned and no effect on persistence. The evidence also suggests that a more comprehensive learning community program, such as Kingsborough’s, may lead to greater benefits for academically underprepared students than the average program. However, programs such as Kingsborough’s are more expensive to run and may be more challenging for the typical college to operate at scale.

To produce dramatic improvements in the outcomes of developmental education students, approaches that are far more comprehensive than a one-semester learning community may be required. Progress needs to be made in carrying out and evaluating robust reforms aimed at fundamentally transforming the educational experience of academically underprepared students.

Gordon L. Berlin
President, MDRC
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Sometimes it takes more than a village to conduct a research project and in the case of this one it took a small city. The authors of this report would like to begin by thanking the six colleges that participated in the study that led to this report: The Community College of Baltimore County, Hillsborough Community College, Houston Community College, Kingsborough Community College, Merced College, and Queensborough Community College. Without the dedication of the staff, instructors, and administrators at these colleges and the willingness of hundreds of their students to volunteer for the study, this project would not have been possible. Opening up your institutions to the spotlight of an outside evaluation takes courage, and we are humbled by the willingness of these colleges to do just that.

Five of the six programs discussed in this report were part of the Learning Communities Demonstration, a project of the National Center for Postsecondary Education (NCPR), which was funded by a grant from the Institute of Education Sciences, U.S. Department of Education. The Kingsborough program featured in this report was part of the Opening Doors demonstration. Both projects benefited from the generous support of the Bill & Melinda Gates Foundation, the Ford Foundation, the Kresge Foundation, Lumina Foundation for Education, and the Robin Hood Foundation. We are deeply grateful for their contributions and support.

NCPR was a partnership among several research and education organizations, including MDRC; the Community College Research Center (CCRC) at Teachers College, Columbia University; the Curry School of Education at the University of Virginia; and faculty at Harvard University. Although many individuals from all of the partners contributed their ideas and feedback over the years, we would like to single out Thomas Bailey of CCRC, in particular, for his invaluable guidance and spot-on comments on all the reports that were produced during the Learning Communities Demonstration.

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Donna Chan helped process and present the student outcomes data in this report. Margaret Bald skillfully edited the report, and Stephanie Cowell and David Sobel prepared it for publication.

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The Authors
Executive Summary

Every year, hundreds of thousands of Americans — some fresh out of high school, others older and working to support themselves or their families, some financially dependent on their parents, others parents of their own children — show up at their local community college to register for classes. While a few register for a class or two for recreational purposes, the vast majority enroll intent on their goal of earning a postsecondary credential so that they may either pursue a career or qualify for a better job. Virtually all have a high school credential and believe that because they do they can start earning college credits right away. But before they can register for classes, they are first required to take a test in both mathematics and English (reading and writing). As they file into the testing room, many do not realize that the college has identified a “cut score” ahead of time for each test, and if their score falls below it, they will be required to take one or more developmental math or English courses before enrolling in college-level courses or graduating. These “developmental education students” make up over half of all entering community college students.¹ A large proportion of students who are referred to developmental education never enroll in or complete their recommended sequence of courses.²

Efforts to improve the outcomes of students who are assigned to developmental education in community colleges have intensified in recent years, and rigorous evaluations of these are gradually accumulating. Recognizing the need for more research, the U.S. Department of Education, through a grant (R305A060010) from the Institute of Education Sciences, established the National Center for Postsecondary Research (NCPR) in 2006. One of NCPR’s primary studies, led by MDRC, was the Learning Communities Demonstration. Learning communities involve placing students into groups that take two or more “linked” courses together, and are a widely used strategy to improve the outcomes of community college students in developmental education.


The primary question addressed in this report is whether learning communities lead to better educational outcomes than regular classes, or “business as usual,” for students who are placed into developmental English and math at community colleges. The main findings are that learning communities produce a small (half-credit) impact on credits earned in the targeted subject (English or math), no impact on credits outside that subject, and a small (half-credit) effect on total credits earned during up to two semesters after the program ends. They do not have an impact on persistence in college. These findings are based on a sample of nearly 7,000 students who were assigned at random to learning communities or to regular college classes and services. The learning communities in the study varied in content and quality but are probably typical of how learning communities are usually operated in community colleges.

What Are Learning Communities?

Learning communities refer to small cohorts of students who are enrolled together in two or more linked courses in a single semester. Unlike instructors of “stand-alone” courses, learning community instructors are expected to communicate with each other to align their syllabi, write integrated curricula, and prepare common assignments. They also discuss individual students who appear to be struggling or whose attendance is erratic in order to come up with a shared strategy to get them back on track academically. In addition to the linked classes, learning communities often include enhanced support such as tutoring and extra advising. It is thought that students in learning communities will form stronger relationships with each other and with their instructors, will engage more deeply with the content of the courses when they see a context for what they are learning, and will therefore be more likely to pass their courses, persist from semester to semester, and graduate with a credential.

Early Evidence of the Promise of Learning Communities

Three years before the NCPR and the Learning Communities Demonstration got under way, MDRC launched the first major random assignment study of learning communities as part of the Opening Doors demonstration. Opening Doors tested several distinct interventions designed to promote better student outcomes in community colleges, including a learning communities program at Kingsborough Community College in Brooklyn, New York. The program at Kingsborough linked a developmental or college-level English course with a college-level course such as psychology or sociology, and a freshman orientation course. In addition to attending linked classes together as a cohort, students received book vouchers, extra advising, and access to a tutor.

Early results from an evaluation being conducted by MDRC of this program were encouraging. Students who were given the opportunity to enroll in a learning community were more likely than the control group to attempt and pass the developmental course sequence in
English, and by the end of the fourth semester, students in the program group had earned 2.4 credits more than students in the control group. It was these findings that provided the impetus for both a long-term follow up of the students in the original Opening Doors learning community program at Kingsborough and the multisite Learning Communities Demonstration.

The Six Learning Communities Programs in This Report

The Learning Communities Demonstration focused on learning communities designed for students in developmental education. Five of the six community colleges that participated in the demonstration targeted such students. This report combines data from these five sites as well data on a subset of sample members (those who tested into developmental English) from Kingsborough’s Opening Doors program, described above. The resulting six programs studied in this report were operated by the following colleges:

- The Community College of Baltimore County (CCBC) (Baltimore, MD)
- Hillsborough Community College (Tampa, FL)
- Houston Community College (Houston, TX)
- Kingsborough Community College (Brooklyn, NY)
- Merced College (Merced, CA)
- Queensborough Community College (Queens, NY)

Typical learning communities in community colleges for developmental education students link two or three courses, one of which is a course in developmental English or math and another that is either a college-level course, another developmental course, or a “student success” course. Instructors typically communicate at least once or twice during the semester to align and integrate the courses. Support services such as extra tutoring are often added to the

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4One college, Kingsborough, created a different type of learning community, building on its Opening Doors program but targeting “college-ready” students — that is, students who had completed most if not all of any developmental course requirements and had declared a major to prepare them for a specific career. This program is not discussed in detail in this report; readers are encouraged to read about this program and its results in a separate report. Site-specific findings from the implementation and impacts studies for all six programs in the Learning Communities Demonstration have been published in a series of reports that are listed at the end of this report.

5The curriculum in student success courses focuses on skills needed to succeed in college, with topics ranging from time management and study skills to money management and access to financial aid.
program. The learning community programs that were implemented and tested at these six colleges were purposely selected to represent a range of such typical programs as they exist in community colleges. They varied in several dimensions:

- **Targeted subject:** Four of the six programs (CCBC, Hillsborough, Kingsborough, and Merced) focused on English as the developmental subject, and two (Houston and Queensborough) focused on math.

- **Courses linked:** Four programs (CCBC, Kingsborough, Merced, and Queensborough) included a college-level course in some or all of the links; in addition, the CCBC program included a noncredit seminar to support student learning, and the Kingsborough program also linked a one-credit orientation course. Hillsborough and Houston linked a developmental course with a student success course.

- **Emphasis on curricular integration:** Two colleges (Kingsborough and Merced) emphasized curricular integration across the links from the start of the demonstration, while four only did so once the demonstration was under way, in part responding to encouragement to do so by MDRC and other colleges.\(^6\)

- **Inclusion of additional support services:** One college (Kingsborough) stood out from the others in the intensity and type of extra academic and advising support it offered students in learning communities. Tutors were assigned to each learning community. Kingsborough also helped students in the learning communities pay for their books, and if they agreed to enroll in the short intersession following the program, they received an additional book voucher.

### Overview of Study Design and Key Findings

The focus of this study is determining the effectiveness of learning communities in improving persistence and progress toward a credential compared with regular services offered in developmental education. Random assignment was used in all six sites to create a program group of students who were given the opportunity to enroll in a learning community and a control group of students who could enroll in any course for which they were eligible as long as it was not in a learning community. Across the six sites, 6,974 students were randomly assigned, about half of

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\(^6\)While an effort was made to include programs that were more advanced (including tight integration between the linked classes), as well as more basic (primarily the co-enrollment of students in two or more classes), it proved difficult to find programs in the former category.
whom had the chance to enroll in one of the 174 learning communities across the six colleges. Transcript data were collected documenting enrollment, course-taking, and credit accumulation for the semester immediately following random assignment and for two semesters afterward. Implementation research was conducted at each site to assess the degree to which the programs were implemented with fidelity to the programs as designed by the colleges.

Findings from the Impact Study Using Pooled Data Across All Sites

Three semesters after they entered the study, the program group students appeared to have slightly better outcomes in terms of credits earned than the control group students, who did not have the opportunity to enroll in a learning community.

- **Learning communities had a small, positive effect on progress in the subject targeted by the learning community (either English or mathematics).** Learning communities, on average, had a positive impact both on students’ attempting and earning credits in the targeted subject, as shown in Figure ES.1. The program’s estimated half-credit impact in the program semester was maintained for up to two semesters after the learning community was over. The estimated impact on credits earned was in part driven by the impact on attempting credits: When students are more likely to enroll in the course, they are more likely to complete it.

- **Learning communities did not have an effect on credits earned in other courses outside the targeted subject.** The program and control group earned about the same number of credits in college-level courses, “student success” courses, and other developmental courses that were outside the targeted subject area.

- **Learning communities had a small positive effect on overall academic progress (total credits earned).** During the program semester, learning community students earned an estimated half-credit more than their control group counterparts, representing an 8 percent increase in total credit accumulation. This was primarily a result of students earning half a credit more in the targeted subject. Over the following two postprogram semesters, the magnitude of the cumulative estimated impact remained approximately the same, as shown in Figure ES.2.

- **The programs varied in effectiveness with respect to progress in the targeted subject area but were fairly homogenous with respect to total credits earned.** For example, the estimated impact on progress in the targeted subject area at Kingsborough was one credit more than the pooled average
The Learning Communities Demonstration

Figure ES.1

Cumulative Credits Earned in the Targeted Subject by Pooled Sample of Developmental Education Students

Final Report of the Learning Communities Demonstration

Cumulative credits earned

First Semester Second Semester Third Semester

Program Group 0.5*** 0.5*** 0.4**
Control Group 2.7 4.0 4.7
2.2 3.5 4.2

SOURCE: MDRC calculations from the Community College of Baltimore County, Hillsborough Community College, Houston Community College, Kingsborough Community College, Merced College, and Queensborough Community College transcript data.

NOTES: Rounding may cause slight discrepancies in sums and differences.
A two-tailed t-test was applied to differences between research groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.
The probability of being assigned to the treatment group varies across colleges and within random assignment cohorts, and estimates are weighted to account for the different random assignment ratios. Estimates are adjusted by campus and cohort. Standard errors are clustered by learning community link.

impact estimate. However, the programs’ average effects were fairly homogeneous across the colleges with respect to total credit accumulation. This suggests that the pooled results are a reasonable summary of the average effectiveness of learning communities at these six colleges.
Learning communities had no effect on persistence. Students in the program group were no more likely than the control group to enroll in college in the first, second, or third semester after they entered the study.

In addition to examining the overall average effectiveness of learning communities and college-level variation in effectiveness, this report considers whether learning communities are relatively more or less effective for certain student subgroups.
For the main planned subgroups, race by gender and recent high school graduates, there was no discernible evidence that learning communities’ effects varied. Based on guidance from a group of external reviewers, MDRC conducted exploratory analyses on several additional subgroups, including students who are the first in their family to attend college, those who usually speak a language other than English at home, single parents, and students whose parents pay for more than half of their expenses. For the first three of these subgroups, there was no evidence that learning communities led to different impacts. For the fourth subgroup, there was some evidence that the program may have been more effective for students who were financially dependent on their parents (that is, students who reported that their parents paid for more than half of their expenses).

Findings from the Implementation Research and Cost Study

A review of implementation research conducted in all six sites resulted in the following key findings:

- The programs in all six sites were well implemented according to the intentions of the colleges, despite considerable variation within each college in the extent to which the courses in the links were tightly integrated. Even in colleges such as Kingsborough and Merced, which had been running learning communities for some time and where integration was emphasized and supported, few learning communities achieved a level of integration that would meet the standard of an ideal learning community.

- The college experiences of students in the program group were on the whole distinctly different from those of students in the control group. For example, in contrast to the experiences of program group students, students in the control group did not generally attend classes where they knew everyone from another class. Learning community instructors were more likely than instructors teaching in stand-alone courses to report having beliefs and pedagogical practices that are commonly associated with learning communities.

- The Kingsborough program and setting differed in ways that may explain the somewhat larger impacts at this site. Compared with the other sites, Kingsborough offered more enhanced services, particularly advising, to students in the learning communities. Also, the three-course link in the learning communities was associated with more credits than in the other programs, and students in the learning communities were actively encouraged to enroll in the short intersession directly after the semester in the learning...
community. Finally, the students in the Kingsborough program were more likely to be full time and financially dependent on their parents.

- **The average cost of a learning community incurred during the semester in which the learning community was operated was about $570 per student.** The cost per student was higher at Kingsborough than at the other two sites for which detailed cost data were collected, owing in part to the provision of enhanced support services.

**Conclusions**

Colleges and policymakers now have available a large amount of evidence to consider when making critical choices about whether or how to invest in learning communities. This evidence, described in this report as well as in a series of reports from both the Learning Communities Demonstration and the Opening Doors demonstration, addresses a range of topics, including average short-term impacts on academic outcomes, the experience of implementing and scaling up learning communities, and the costs of learning communities relative to their effectiveness. Importantly, an MDRC report on the Opening Doors program at Kingsborough presents evidence that when followed for six years after participating in learning communities, students in the Kingsborough sample graduated at a higher rate than the control group. While this was most evident for students who had placed into college-level English, there was also evidence of long-term impacts for students with the greatest developmental needs in English.

The overall conclusion from the combined research is that while learning communities on average and as typically operated in community colleges for students in developmental education are not likely to improve persistence or lead to meaningful impacts on educational outcomes, a learning community program with enhancements such as additional advising, book vouchers, and the encouragement to stay enrolled continuously may lead to greater benefits. However, such programs are more expensive to run and may be more challenging for the typical college to operate at scale.

Policymakers and colleges need to have realistic expectations of what a one-semester intervention of any kind, including learning communities, can do to change the trajectories of large numbers of academically underprepared students. The research on learning communities as typically offered in community colleges suggests that, on average, they lead to modest, positive effects on credits earned, at least in the short term. However, the road to a credential is

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7Sommo, Mayer, Rudd, and Cullinan (2012).
8Sommo, Mayer, Rudd, and Cullinan (2012).
a long one for students who begin in developmental education, and most learning community programs alone are not likely to help large numbers of students reach their goal of graduation.
OTHER MDRC AND NCPR PUBLICATIONS ON LEARNING COMMUNITIES

Commencement Day
Six-Year Effects of a Freshman Learning Community Program at Kingsborough Community College

Learning Communities for Students in Developmental English
Impact Studies at Merced College and The Community College of Baltimore County

Breaking New Ground
An Impact Study of Career-Focused Learning Communities at Kingsborough Community College

Learning Communities for Students in Developmental Math
Impact Studies at Queensborough and Houston Community Colleges
NCPR, 2011. Evan Weissman, Kristin F. Butcher, Emily Schneider, Jedediah Teres, Herbert Collado, David Greenberg with Rashida Welbeck.

Learning Communities for Students in Developmental Reading
An Impact Study at Hillsborough Community College

Scaling Up Learning Communities
The Experience of Six Community Colleges
NCPR, 2010. Mary G. Visher, Emily Schneider, Heather Wathington, Herbert Collado.

A Good Start
Two-Year Effects of a Freshmen Learning Community Program at Kingsborough Community College

Building Learning Communities
Early Results from the Opening Doors Demonstration at Kingsborough Community College

NOTE: All the publications listed above are available for free download at www.mdrc.org.