

# BRINGING DEVELOPMENTAL EDUCATION TO SCALE

LESSONS FROM THE  
DEVELOPMENTAL  
EDUCATION INITIATIVE

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## Overview

While over half of all community college students are judged to need developmental (or remedial) reading, composition, and/or mathematics classes, these courses — which students are often required to complete before they can enroll in courses that confer credit toward a degree — typically present major roadblocks to student progress. To address this issue, the Developmental Education Initiative (DEI) was created in 2009. Fifteen highly diverse community colleges that had been early participants in Achieving the Dream, a national community college reform network, each received a three-year grant of \$743,000 to scale up existing interventions or establish new ones that would help students progress through developmental courses more quickly and successfully. The colleges typically identified two or three “focal strategies” — most often, student support services and new instructional strategies — for achieving these goals. This second and final report from the evaluation relies on both qualitative and quantitative data to examine the implementation of these focal strategies.

The report finds that, across the colleges, the percentage of incoming developmental students participating in at least one focal strategy more than doubled, rising from 18 percent in fall 2009 to 41 percent in fall 2011. Resource adequacy, communication, engagement, and a departmentwide or institutionwide commitment to a particular instructional practice all facilitated scale-up. At the same time, colleges generally expected to reach many more students with their reforms than they actually did. Factors that worked against greater scale-up sometimes reflected competing values and goals: institutional reluctance to impose mandates about how students should learn and instructors teach, students’ own wishes and priorities, a perceived need to scale *back* when strategies appeared to be ineffective, and a desire to evaluate the strategies’ apparent effectiveness before moving forward.

A rigorous impact study was not part of the evaluation. Instead, outcomes for focal strategy participants were compared with outcomes for nonparticipants, and outcomes for pre-DEI cohorts of students were compared with outcomes for students who enrolled after the DEI began. While the results cannot be regarded as conclusive, the two different analytic approaches yield similar findings: Most often, there was no statistically significant difference between the two groups being compared. When there was such a difference, students were much more likely to benefit from the DEI strategies than to be harmed by them.

The DEI’s influence on participating colleges extends beyond the focal strategies. The colleges used DEI monies to support policy changes and other programmatic reforms as well as to fund both off-site conference attendance and on-campus professional development on a broad range of topics related to developmental education. The DEI stimulated wider discussions about student success and campus priorities, and some DEI innovations will carry over into future initiatives.



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## Preface

As America climbs out of the Great Recession, the workers most likely to be left behind are those without postsecondary credentials. Community colleges play an important role in supplying students with the education and training that they need to succeed in the labor market. But many students enrolling in community college lack the academic skills deemed necessary to do college-level work. They are required, instead, to take developmental (remedial) classes before embarking on coursework that confers credits and leads to a degree. Unfortunately, such students all too often do not complete their prescribed developmental coursework, and they “stop out” or drop out of college altogether.

The Developmental Education Initiative (DEI), funded by the Bill & Melinda Gates Foundation and by Lumina Foundation, was an effort to remedy this situation. Fifteen community colleges were selected to expand preexisting interventions or put in place new ones directed toward helping students move through developmental coursework more quickly and more successfully. MDRC was asked to assess the degree of scale-up that took place, to examine the outcomes associated with the interventions, and to identify the conditions that facilitated or constrained scale-up efforts.

This study shows that colleges were, indeed, able to expand the reach of their interventions — although, in most cases, not to the extent that they had hoped. While the evaluation design was not rigorous enough to provide conclusive evidence, there is reason to think that some of the interventions improved student outcomes. Finally, the report singles out a number of factors that led to successful scale-up. It is hoped that its lessons will assist other colleges as they seek to help more underprepared students to attain the skills and credentials that have increasingly become key to workplace success.

Gordon L. Berlin  
President



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Sung-Woo Cho at the Community College Research Center (CCRC) at Teachers College, Columbia University, contributed in key ways to the analysis of the quantitative data. At MDRC, Herbert Collado, Kelley Fong, Alissa Gardenhire, and Rashida Welbeck conducted periodic interviews with project directors at the various sites. Mario Flecha cheerfully arranged both meetings and travels.

Also at MDRC, Elizabeth Zachry Rutschow provided a searching critique of an earlier draft that greatly strengthened the final version. Fred Doolittle and Thomas Brock offered both wise guidance and unfailing support. Alyssa Ratledge took on the editing of the report's exhibits as well as fact-checking with skill and tact. Robert Weber edited the report, and David Sobel and Stephanie Cowell prepared it for publication.

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The Authors



## Executive Summary

There is wide agreement that the well-paying jobs of the future will require postsecondary credentials. But for many students attending community college, developmental (or remedial) classes in reading, composition, and/or mathematics — the courses that students often must complete before they can enroll in courses that confer credit toward a degree — pose an often-insuperable barrier to progress. While over half of all community college students are judged to need at least one developmental class, the majority of students who are referred to developmental education do not complete their prescribed sequence of remedial courses, much less persist and obtain a diploma or certificate.

To address this issue, the Bill & Melinda Gates Foundation created the Developmental Education Initiative (DEI) in 2009; Lumina Foundation for Education funded the evaluation. Fifteen colleges that had been early participants in Achieving the Dream (AtD): Community Colleges Count, a national community college reform network dedicated to evidence-based decision-making, were selected to receive grants of \$743,000 each over a three-year period. The institutions are highly diverse in size, location, and the characteristics of the students they serve. The purpose of the DEI grants was to enable the colleges to scale up existing interventions, or establish new ones, that would help students to progress through developmental courses more rapidly and more successfully or to bypass these courses altogether. DEI funding also financed state policy teams that sought to influence state higher education legislation and policies. MDC, a North Carolina-based nonprofit organization, was selected as managing partner of the demonstration and in this role monitored and assisted the colleges, organized communications, and convened regular meetings of demonstration participants.

Six other organizations made up the partnership that provided leadership and support for the colleges. Among these, MDRC, a nonprofit, nonpartisan policy research organization, was asked to evaluate the demonstration, with the Community College Research Center (CCRC) at Teachers College, Columbia University, serving as evaluation partner. The directive to the evaluators was to examine the implementation of the DEI at the participating colleges. This report — the second and final report from the evaluation<sup>1</sup> — relies on a combination of qualitative data (primarily interviews with key personnel conducted during the course of site visits to all 15 institutions and through periodic telephone calls with project directors) and

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<sup>1</sup>For the previous report, see Janet Quint, D. Crystal Byndloss, Herbert Collado, Alissa Gardenhire, Asya Magazinnik, Genevieve Orr, Rashida Welbeck, and Shanna S. Jaggars, *Scaling Up Is Hard to Do: Progress and Challenges During the First Year of the Achieving the Dream Developmental Education Initiative* (New York: MDRC, 2011).

quantitative data (information on participation and on student outcomes that the colleges regularly collected). It addresses three main questions:

- To what extent did the colleges scale up their chosen developmental education reforms to serve more students?
- What factors affected the colleges' ability to expand their programs and practices?
- To what extent were the colleges' strategies associated with improvements in student outcomes?

The report also considers ways that participation in the DEI influenced the colleges more broadly. For these reasons, it may be of interest to other colleges looking to scale up reforms (especially reforms that are related to instruction and the provision of student supports), as well as to funders concerned about how best to support community colleges in bringing promising ideas to scale.

## **The Initiative's Premises and On-the-Ground Realities**

The funders' original goal was for the colleges to expand strategies that the colleges had developed as Achieving the Dream sites and that, according to the colleges' internal evaluations, had demonstrated success. Early on, however, the funders agreed that colleges should be allowed to develop new initiatives as well as to scale up existing interventions. Soon after the demonstration was launched, colleges were advised to identify up to three "focal strategies" that could be expected to serve increasing numbers of students over time and on which the evaluation would center. As it turned out, the focal strategies that the colleges proposed were almost evenly divided between ones that were new and ones that were scaled up from existing interventions.

Previous efforts to scale up interventions at community colleges had largely gone unexamined, and learning what it takes to expand promising interventions was a key demonstration goal. An initial assumption was that funding constraints were a fundamental impediment to scaling and that, with these eliminated through generous grants to the DEI institutions, college administrators — given modest technical assistance — would have the capacity to lead major scale-up efforts. Within the first year, however, it became apparent that a variety of other barriers stood in the way of scaling, and MDC was called on to provide more coaching and additional information-exchange meetings. MDC also prepared a planning guide detailing in user-friendly language the steps to be taken and the tasks to be accomplished in scaling up.

The report finds that the DEI colleges made demonstrable progress in implementing and scaling up developmental education reforms but that they also faced three major challenges.



First, the operational definition of “scaling up” was not fully specified, and it changed over time. The Request for Proposals called for the colleges to mount strategies that would reach “a significant number of students,” and, at the outset, colleges were asked to establish their own targets for the number of students to be served by the focal strategies each year. About two-thirds of the way through the demonstration, DEI partners and funders introduced a new conceptual framework and vocabulary for planning scale-up. They urged the colleges to consider how they could move from serving *some* students in pilot projects to serving *more* students (as they were doing in the DEI) and, finally, to reaching *most* if not all students eligible for a particular intervention. What “most” meant was not defined for individual institutions; it was made clear, however, that colleges were not expected to serve most students within the demonstration period.

Second, at the time that the initiative was funded, the limited evidence base then available meant that little was known with certainty about how to improve developmental education outcomes for community college students. As a result, most of the focal strategies that the colleges proposed to expand and implement represented “best practices” rather than policies and programs whose beneficial effects had been proven through rigorous research.

Finally, the DEI unfolded at a time when community colleges nationwide were experiencing substantial increases in enrollment. All the DEI institutions registered increased student populations, and, at half of them, the number of students rose by 20 percent or more. While the proportion of students requiring developmental education rose by just 1 percent across all the colleges, this statistic masks considerable variation, with some colleges experiencing double-digit growth in the proportion of students needing remediation. Thus, at the same time that the colleges were implementing the new DEI strategies and policies, they were facing significant challenges in making instructional and support services available to much larger numbers of students.

## **The Focal Strategies**

Collectively, the 15 DEI colleges implemented 46 focal strategies. For analytic purposes, these strategies were classified as fitting one of four *types* and as having one of four *objectives*. The great majority (87 percent) of focal strategies were of two types: instructional strategies (changes in the content of developmental classes or in the means by which they were taught) and support strategies (efforts to address students’ academic and personal issues). Nine of the colleges adopted at least one of each of these two kinds of strategies. The two remaining types of strategies — policy changes and strategies directed toward high school students — were less frequently cited. Moreover, the objectives of these last two kinds of strategies could not readily be classified, sometimes because they had multiple objectives.

Of the 40 strategies whose objective was identifiable, 19 were classified as aimed at providing supports to bolster students' skills or to help them resolve other problems; examples of strategies with this objective include study skills courses, tutoring, and advising. Fourteen strategies — including ones involving modularized and computerized courses and paired college-level and developmental courses — were aimed at accelerating students' progress through the developmental sequence. Four strategies sought to help students avoid unnecessary developmental coursework through placement test preparation, and three entailed implementing new approaches to make instruction more relevant and engaging.

## **Key Findings About Scaling Up the Focal Strategies**

- **Participation in the focal strategies more than doubled over time, but most of the strategies did not meet established participation goals.**

Across the colleges, the proportion of incoming developmental students served by at least one focal strategy rose from 18 percent in fall 2009 (the initiative's first semester) to 41 percent in fall 2011 (the last semester for which data were available). Had participation data from spring 2012 been available, the measured increase would have been even larger. Nonetheless, for reasons discussed below, colleges generally did not meet the ambitious participation goals that they had set for serving students with their individual focal strategies. Both participation data and information about the colleges' target numbers were available for 33 strategies. For four of these strategies, participation equaled or exceeded (sometimes greatly) the targets that colleges had established. The majority of strategies fell far short, however, reaching less than half the students to whom they were targeted. As noted above, colleges were not expected to go from serving "more" to serving "most" students within the time frame of the DEI demonstration. Still, by fall 2011, 10 of the 15 colleges were unable to reach as many as half their incoming developmental students with a focal strategy and, thus, had a considerable way to go in meeting the longer-term goal of serving most students. Interestingly, there was no difference in the extent of scale-up between new strategies and preexisting ones.

- **Resource adequacy, communication, and engagement were three important factors promoting large-scale implementation of the focal strategies.**

Resources needed for scaling up the strategies included adequate staff, space, and, for many interventions, technology. Strong and positive communications helped ensure scale-up, with the vocal support of the president proving especially critical. Professional development for staff members and staff involvement in planning and oversight committees increased support for the strategies. Colleges also learned the importance of marketing the focal strategies to students, and they used a variety of media to do so, from brochures to videos to social networks.

- **A fourth key factor was a departmentwide or institutionwide commitment to uniform instructional practice; several instructional strategies that reflected this commitment were notable because they were begun with the intention of serving all students from the outset.**

Three new focal strategies — ones involving computerized instruction and the infusion of content from sociology and history into developmental reading and English courses — entailed decisions that all faculty members who were teaching sections of a course would teach them a certain way. This is a particularly efficient mode of scale-up because all necessary faculty resources are already in place and because all students who need developmental classes must follow the prescribed approach. In two of the three cases, administrators prescribed the new instructional practices in a process referred to here as “gentle fiat”: While instructors may help select and may receive professional development on the new approach (this is what makes the fiat “gentle”), they are not free to deviate from it. In the third instance, faculty members themselves decided to adopt the new approach, and, in general, the experience of the DEI institutions indicates that faculty input into the chosen strategy helps to curb resistance to it and to make for smoother implementation.

- **In contrast, factors that worked against full scale-up included — along with resource limitations — institutional reluctance to impose mandates about how students should learn and instructors teach, students’ own wishes and priorities, a perceived need to scale *back* when strategies appeared to be ineffective, and a desire to evaluate the strategies’ apparent effectiveness before moving forward.**

Limited scale-up sometimes reflected colleges’ competing priorities and values. While colleges wanted to scale up their focal strategies, some colleges also wanted to give students a choice of learning modalities rather than to impose a uniform approach. Some colleges wanted to step back and reevaluate rather than to move forward when an approach did not seem to be working. And even when approaches did seem to be working, some colleges wanted some evidence of effectiveness before expanding them further.

## **Key Findings About Student Outcomes**

The analysis examines five key outcomes: total credits earned in the first term, grade point average in the first term, persistence into the second term, passing the “gatekeeper” (first college-level English course required for completion of a degree) by the end of the second term, and passing the gatekeeper math course by the end of the second term.

A rigorous impact study using random assignment or a strong alternative research design was not part of the charge to the evaluators. The methods used in this study can show that the DEI was *associated* with the outcomes that were observed but not that the DEI *caused* these outcomes. The findings below should therefore be regarded as suggestive but in no way conclusive.

- **When outcomes for participants in the focal strategies were compared with outcomes for nonparticipants, the majority of outcome differences (61 percent) were not statistically significant. About a third of the strategies were associated with positive gains for students, and a handful were associated with negative outcomes. Finally, participation was more likely to be associated with positive results for some outcomes than for other outcomes.**

One approach to the analysis was to compare outcomes for participants in the strategies during their first term with outcomes for students who were eligible but did not participate, controlling as much as possible for students' demographic and achievement-related characteristics. (Unmeasured differences could not be controlled for, however.) For all but a small number of outcomes, participation in the strategies was associated either with better outcomes for participants or with no statistically significant differences between outcomes for participants and nonparticipants. Participation in the DEI strategies was especially likely to be associated with positive results on two of the five outcomes examined: credits earned during the first term and passing the gatekeeper English course by the end of the second term.

- **Strategies that involved contextualized instruction and collaborative learning were more likely than other kinds of strategies to be associated with positive outcome differences.**

Because there are only three examples of such strategies, making generalizations is risky; this finding is, however, consistent with the results of other research. Thus, more rigorous outside studies confirm that contextualized instruction in vocational programs and learning communities has helped students to earn more course credits and progress from developmental into college-level coursework. There is also strong evidence supporting the use of structured collaborative learning as a pedagogical technique.

- **When outcomes for cohorts of students who enrolled in the colleges before the inception of the DEI were compared with outcomes for students who enrolled after the DEI was put in place (whether or not these students participated in any of the focal strategies), the later enrollees were found to have achieved outcomes that were either better than or similar to the outcomes of students who had entered earlier.**

This approach to examining outcome differences yields findings similar to the approach that compares participants with nonparticipants. After the DEI's implementation, students generally did as well as or better than they had previously. Again, factors other than the DEI may explain these differences.

- **In general, strategies that reached more than 50 percent of the students whom they aimed to serve were more likely to be associated with positive outcomes than strategies that reached smaller numbers of students.**

It is not clear whether and to what extent these strategies had to do with the positive outcomes. It may be that colleges that were effective in engaging students in their focal strategies were also likely to be effective more generally.

From a quantitative point of view, the DEI represents a modest improvement for the participating colleges. While the number of participants in the focal strategies doubled over the period measured, most strategies fell short both of the numerical targets that colleges had set for themselves and of reaching the majority of students in their target populations. And while many more strategies were associated with positive outcomes for participants than with negative outcomes, the majority of strategies did not make a difference one way or the other.

## **Other Outcomes: The DEI in Broader Perspective**

It would be inappropriate to judge the DEI on the basis of the numbers alone, however. To help students accelerate through and otherwise succeed in their developmental courses, the colleges used DEI funding to support policy changes and programmatic reforms beyond those included in their focal strategies. The colleges also used their DEI grants to support on-campus professional development on a broad range of topics related to developmental education, including the use of new instructional modalities, the characteristics and needs of low-income students, and how instructors could help students better meet those needs. College personnel learned from one another and from their counterparts at non-DEI colleges at conferences and meetings whose attendance was made possible by DEI monies. And, at some colleges, the DEI stimulated wider discussions about student success and campus priorities.

It also appears that the DEI will leave a lasting legacy at participating colleges. At some institutions, leaders were committed from the start to continuing to support the focal strategies with regular college funding after the DEI grants expired; at other institutions, leaders did not make such advance commitments but have opted to move forward with the strategies that they deemed successful. Some DEI innovations will carry over into future initiatives — notably, the Bill & Melinda Gates Foundation's new community college reform

effort known as Completion by Design. And the intervention has brought forward a new group of able and thoughtful administrators.

At the outset of the DEI, little was known about what is required for scaling up initiatives in community colleges. This study suggests that additional resources may be necessary but are not sufficient. Also critical are communication, engagement, and a commitment to uniform practice throughout a department or institution. Time is also critical, not just for putting new interventions in place but also for securing the buy-in and support needed for smooth implementation. Yet another lesson concerns the importance of having expectations that are well specified and shared by all parties. Finally, the experiences of the DEI colleges serve as reminders that scale-up is just one of many objectives that community colleges strive to meet, that the complexities of students' lives can interfere with scale-up efforts, and that both high ambitions and realistic expectations for expanding promising initiatives are in order.

## Chapter 1

# Introduction

Postsecondary education has increasingly become a prerequisite for entry into the middle class. This has become even more true as the United States emerges from the Great Recession. Better-paying jobs demand credentials beyond a high school diploma. But as a 2010 report by the Georgetown University Center on Education and the Workforce indicates, the country is producing too few postsecondary degrees and certificates. As employers demand higher levels of education and training, this shortfall — of an estimated 3 million associate’s degrees or higher, along with 4.7 million postsecondary certificates — will consign those who have lesser credentials to lower-paying jobs or to no jobs at all.<sup>1</sup> Community colleges, already the largest component of the nation’s postsecondary system, have been called on to help fill this gap.<sup>2</sup>

Community colleges play a particularly important role in serving low-income students and older adults who have been away from the classroom for many years. These students are especially likely — based on assessment tests administered upon enrollment — to be deemed to need remedial (“developmental”) classes in reading, composition, and/or mathematics before embarking on college-level coursework that counts toward graduation. Research indicates that over half of all community college students are judged to need at least one developmental class. Developmental classes themselves, however, have all too often proved not just the starting point but also the end to students’ progress through community college. The majority of students who are referred to developmental education do not complete their prescribed sequence of remedial courses, much less persevere to obtain a diploma or certificate.<sup>3</sup>

Recognizing the significance of developmental education as a stumbling block in the path to college graduation, the Bill & Melinda Gates Foundation created the Developmental Education Initiative (DEI) in 2009, and Lumina Foundation for Education funded the evaluation. Fifteen colleges in six states, shown in Table 1.1, each received a grant of \$743,000 over a three-year period. All the colleges were early participants in Achieving the Dream (AtD): Community Colleges Count, a national community college reform network dedicated to evidence-based decision-making. MDC, Inc. — a North Carolina-based nonprofit organization that had been the managing partner of AtD until Achieving the Dream, Inc., was established as a separate entity in 2010 — was selected as managing partner of the DEI as well.

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<sup>1</sup>Carnevale, Smith, and Strohl (2010).

<sup>2</sup>White House Summit on Community Colleges (2010).

<sup>3</sup>Jenkins, Jaggars, and Roksa (2009); Bailey, Jeong, and Cho (2010).

## The Developmental Education Initiative

Table 1.1

### States and Colleges Participating in the Developmental Education Initiative

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<b>Connecticut</b> <ul style="list-style-type: none"><li>• Housatonic Community College</li><li>• Norwalk Community College</li></ul>	<b>Ohio</b> <ul style="list-style-type: none"><li>• Cuyahoga Community College</li><li>• Eastern Gateway Community College</li><li>• North Central State College</li><li>• Sinclair Community College</li><li>• Zane State College</li></ul>
<b>Florida</b> <ul style="list-style-type: none"><li>• Valencia College</li></ul>	<b>Texas</b> <ul style="list-style-type: none"><li>• Coastal Bend College</li><li>• El Paso Community College</li><li>• Houston Community College</li><li>• South Texas College</li></ul>
<b>North Carolina</b> <ul style="list-style-type: none"><li>• Guilford Technical Community College</li></ul>	<b>Virginia</b> <ul style="list-style-type: none"><li>• Danville Community College</li><li>• Patrick Henry Community College</li></ul>

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The purpose of the DEI grants to the colleges was to enable the institutions to establish and scale up interventions that would help students to progress through developmental courses more rapidly and more successfully or to bypass these courses altogether. DEI funding also financed state policy teams that have sought to influence state higher education legislation and policies to enhance student success. In its reliance on both institutional change at the community college and supportive state policy work, the DEI follows the AtD model and theory of change.

Seven organizations, shown in Table 1.2, make up the partnership that provides leadership and support for the DEI. MDC worked closely with the Bill & Melinda Gates Foundation to design the initiative and has directed the entire effort, providing guidance to the colleges, organizing communications, overseeing compliance, reviewing annual report documents, and convening regular meetings of the colleges and other parties.<sup>4</sup> Jobs for the Future has helped the state policy teams to develop a policy agenda, engage the colleges around this agenda, and generate support for identified reforms. The Community College Leadership Program (CCLP) at the University of Texas at Austin has organized and deployed a cadre of consultants to provide technical assistance to the colleges as the colleges deemed

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<sup>4</sup>MDC also published a detailed planning guide (Parcell, 2012), discussed below.



## The Developmental Education Initiative

**Table 1.2**

**Organizational Partners in the Developmental Education Initiative**

Organization	Primary Responsibilities
American Association of Community Colleges <a href="http://www.aacc.nche.edu">http://www.aacc.nche.edu</a>	Provides DEI a voice in national conversations about issues and policies that affect developmental education students through its annual conferences and meetings and publications; gives DEI colleges access to data analysis tools through the Achieving the Dream national database
Community College Leadership Program University of Texas at Austin <a href="http://utccplp.org">http://utccplp.org</a>	Trains and deploys a cadre of technical assistance providers to support the work of DEI colleges; collaborates with other partners on the design and delivery of DEI learning events
Community College Research Center Teachers College, Columbia University <a href="http://ccrc.tc.columbia.edu">http://ccrc.tc.columbia.edu</a>	Assists MDRC with the evaluation, conducting the quantitative analysis of data submitted by the colleges
Jobs for the Future <a href="http://www.jff.org">http://www.jff.org</a>	Provides technical assistance to DEI state policy teams and supports a learning network among states, including semiannual learning events
MDC <a href="http://www.mdcinc.org">http://www.mdcinc.org</a>	Directs the overall initiative, including compliance and communications, integrating lessons emerging from the participating colleges and states, coordinating partners in the design and delivery of that learning, and developing tools and resources for scaling and sustaining innovations
MDRC <a href="http://www.mdrc.org">http://www.mdrc.org</a>	Leads the evaluation of the initiative
Public Agenda <a href="http://www.publicagenda.org">http://www.publicagenda.org</a>	Augments the communications and engagement strategy of the initiative, conducting focus groups with college administrators and business leaders on the topic of developmental education

necessary.<sup>5</sup> MDRC, a nonprofit, nonpartisan policy research organization, is the principal evaluator of the DEI, with the Community College Research Center (CCRC) at Teachers Col-

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<sup>5</sup>The DEI colleges could also contract for technical assistance from individuals outside the CCLP pool. The colleges had additional opportunities for expert consultation as part of their participation in AtD. (Each AtD institution receives one visit each year from its AtD leadership coach and data coach.) AtD coaching  
(continued)

lege, Columbia University, serving as evaluation partner and focusing on quantitative outcomes. The American Association of Community Colleges and Public Agenda have played subsidiary roles.<sup>6</sup>

The directive to the evaluators was to examine the implementation of the DEI at the participating colleges; the state policy work, while an important component of the initiative, is outside the scope of the research effort. A May 2011 evaluation report considered the initiative's evolution during the first year of the grant; its objective was to explain the elements that facilitated or constrained early progress in implementing strategies that the 15 schools designated as their key, or "focal," strategies.<sup>7</sup>

This is the second and final MDRC report on the initiative. It addresses three main questions:

- To what extent did the colleges scale up their chosen developmental education reforms to serve more students?
- What factors affected the colleges' ability to expand their programs and practices?
- To what extent were the colleges' strategies associated with improvements in student outcomes?<sup>8</sup>

The report also considers ways that participation in the DEI influenced the colleges more broadly. For these reasons, the report may be of interest to other colleges looking to scale up reforms (especially reforms that are related to instruction and the provision of student supports), as well as to funders concerned about how best to support community colleges in bringing promising ideas to scale.

The remaining sections of this chapter provide background information about the initiative and the evaluation, discuss the methodology on which the report is based, and preview the remaining chapters.

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teams were instructed to focus their 2010-2011 and 2011-2012 visits to these colleges on the DEI interventions, on scaling, and on the related work of institutional change.

<sup>6</sup>In addition, Achieving the Dream, Inc., which was established after the inception of the DEI, helped to share findings from DEI colleges throughout the larger AtD national reform network and provided a platform for DEI institutions to present at the AtD Annual Convening on Student Success and through national conference calls.

<sup>7</sup>See Quint et al. (2011).

<sup>8</sup>As discussed below, the evaluation was not funded or designed to determine whether or not the strategies actually *caused* these outcomes. Thus, the report can provide preliminary but not definitive evidence about the effectiveness of the interventions.

## The Background of the Initiative and of This Study

As noted above, the DEI is an outgrowth of Achieving the Dream. As part of that initiative, a number of the colleges had developed strategies to help students to progress through developmental education more quickly or to sidestep developmental coursework entirely and had begun to review evidence on the effectiveness of these interventions. The foundations' original goal was for the colleges to expand those AtD strategies that, according to the colleges' internal evaluations, had demonstrated success. As a result of early discussions, however, the funders agreed that colleges should be allowed to develop new initiatives as well as to scale up existing interventions.

At the inception of the demonstration, previous efforts to scale up interventions at community colleges had largely gone unexamined, and blueprints and guidelines were unavailable. Colleges were encouraged to explore new avenues for expanding what they were doing, with the idea that they could make midcourse corrections if necessary. Learning what it takes to “grow” interventions was a major goal. An initial assumption was that limited financial resources were a major stumbling block to bringing promising interventions to scale, and grant levels were set with this assumption in mind.<sup>9</sup> Modest funding was set aside for colleges to receive some coaching from experts (including former college presidents) who had experience with developmental education reforms and bringing programs to scale.

The proposals that the colleges submitted were extremely ambitious — the number of strategies they proposed to implement or expand ranged from 3 to 14 — and typically included a mix of existing and new interventions. At the DEI Kickoff Institute in July 2009, the colleges were urged to take on fewer strategies, but to do these well. They were also asked to identify up to three “focal” strategies that could be expected to serve increasing numbers of students over time, and it was agreed that the evaluation would center on these strategies, tracking their scaling up both qualitatively and quantitatively. In general, the colleges stuck with these focal strategies over the course of the three-year demonstration. In some cases, however, they added new strategies to the mix. And one focal strategy that was agreed upon early on was never implemented.

Within the first year, it became evident that the initial assumptions about what it would take for colleges to achieve scale were overly optimistic and that many colleges needed more assistance in planning their scaling efforts. MDC added coaching visits to support the colleges and convened additional meetings to support peer learning. MDC also began to prepare a planning guide, the first of its kind directed toward community colleges. Entitled *More to Most*:

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<sup>9</sup>In comparison, colleges participating in the first round of AtD received a planning grant of \$50,000 and grants of \$100,000 during each of the first four years of implementation.

*Scaling Up Effective Community College Practices*, the guide details steps to be taken and tasks to be accomplished in going to scale.<sup>10</sup>

Three points bear additional mention. First, the goals for expansion were initially unclear and changed two-thirds of the way through the demonstration. While the Request for Proposals called for the colleges to mount strategies that would reach a “significant number of students who need developmental education with a goal of major performance improvement,” just what constituted a “significant number” was largely left undefined. After the Kickoff Institute, colleges were asked to estimate the number of students that each of their focal strategies would reach each year, and, during the first two years, all parties accepted these estimates as the participation targets. In the last year of the demonstration, the funder asked that colleges be introduced to a new framework and a new ultimate objective: to move from “more to most” students eligible for the intervention, although colleges were not expected to attain this goal within the grant period. Again, the meaning of “most” — whether it signified a simple majority or a figure much closer to 100 percent — was not specified.<sup>11</sup>

Second, when the initiative was funded, much was speculated but little was known with certainty about what works to improve outcomes for community college students. Most of the strategies that the colleges proposed and subsequently pursued represent “promising practices” — that is, policies and programs that made intuitive sense, that had often been tried previously at the colleges themselves or at other institutions, and that sometimes had been associated with improved student outcomes. These policies and programs had not, however, been subjected to rigorous evaluation, and, for most, there was no strong evidence that they had actually caused the better results for students. Thus, the funders’ hopes and expectations that expanding the reach of previously tried interventions would enable more students to obtain a postsecondary credential in a timely manner exceeded the limited knowledge base about what works to improve outcomes for community college students.<sup>12</sup>

Finally, the DEI unfolded at a time when community colleges across the country were experiencing substantial increases in enrollment, and the DEI colleges were no exception. Between fall 2008 and fall 2010, total enrollment grew at all 15 institutions, and, at half the colleges, the number of students rose by 20 percent or more during the two-year period. Thus, at the same time that the colleges were implementing the new initiative, they were experiencing significant challenges in making instructional and support services available to much larger

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<sup>10</sup>Parcell (2012).

<sup>11</sup>For interventions that were narrowly targeted (for example, to the highest-level developmental students), moving from more to most would not necessarily mean reaching a large *number* of students eligible for the intervention, nor a large share of all students requiring developmental coursework.

<sup>12</sup>A recent MDRC report summarizes what is known about the effectiveness of various strategies aimed at enhancing outcomes for developmental students. See Zachry Rutschow and Schneider (2011).

student populations. The academic preparation of the new students did not differ greatly from that of previous cohorts; on average across the schools, the percentage of new students referred to developmental education increased by just one percentage point between 2007-2008 and 2010-2011. This statistic masks considerable variation: Some colleges experienced double-digit growth in the proportion of students needing remediation, while other colleges saw this proportion decrease over time. Given the overall enrollment boom, however, DEI schools experienced a sizable increase in developmental enrollments.

## **The Methodology of the Report**

This report relies on a combination of qualitative and quantitative data. Throughout the three-year study period, MDRC researchers conducted telephone interviews each semester with the DEI liaisons at all the colleges to learn about the progress of their efforts to implement and scale up their colleges' focal strategies. The researchers conducted two-day site visits to the colleges in spring 2010 to learn more about the colleges and their implementation experiences at first hand. During these visits, they met with college presidents and other leading administrators, as well as with staff members charged with putting the focal strategies into practice.

On the basis of their promising early experiences, MDRC selected five colleges — Danville Community College, El Paso Community College, Guilford Technical Community College, Sinclair Community College, and Valencia College — as the subjects of case studies, which were conducted in fall and winter of the 2011-2012 academic year. Again, researchers interviewed key administrators and faculty members but this time were able to include observations of classes and focus groups with students among their activities while on-site.

The decision to center most of the data collection on the focal strategies was both a strength and a limitation of the study. It allowed for a more in-depth understanding of the implementation of these strategies. But it also meant that other important developments at the colleges that were not included among the focal strategies (such as policy changes that were implemented all at once rather than gradually) may have received less attention than they warranted. As a partial corrective, the researchers reviewed the annual reports that colleges submitted to MDC, which were broad in their scope. And the final interview that the researchers conducted with the DEI liaisons in spring 2012 asked the liaisons to reflect more expansively on what the DEI had meant for their institutions.

On the quantitative front, colleges were instructed to submit data on participation in the focal strategies to JBL Associates (JBL), which processed these data and forwarded the data files to CCRC for analysis. Colleges were also asked to identify comparison groups of students who were eligible for the interventions but did not participate in them. This information allows for a quantitative analysis of the extent to which the strategies were scaled up

over time. It also permits an examination of the degree to which changes in outcomes were associated with participation in a particular strategy. The evaluation was not designed to assess the effects of specific strategies through random assignment of students to program and control groups. (The number of colleges and strategies involved in the DEI would have made this a daunting proposition.) Without random assignment, however, it is impossible to know just how closely nonparticipants in the colleges' comparison group resembled the participants beforehand, so it is equally impossible to be certain that participation (rather than preexisting differences between participants and nonparticipants) *caused* the change in outcomes. While this report takes a sizable step beyond the colleges' own self-reports, it is not able to answer definitively whether the interventions made a difference for students or which interventions were more effective in this regard.

The DEI colleges were encouraged to take risks and to share lessons — good and bad — with other colleges. They were not asked to compete with one another. For this reason, in tables presenting the scaling and outcome findings, the 15 colleges are indicated simply by the letters A to O and are not shown in any particular order. In the qualitative analyses, colleges are usually discussed by name because they have important lessons to teach.

## **The Organization of the Report**

The remainder of the report contains five chapters. After this introductory chapter,

- Chapter 2 describes the participating colleges and reviews the focal DEI strategies and their characteristics.
- Chapter 3 is the first of two chapters that deal with the implementation of the initiative. It examines scale-up from both quantitative and qualitative perspectives, drawing on the data submitted to JBL as well as on information collected during the case study site visits, other site visits, and telephone interviews, to understand the extent to which colleges expanded their focal strategies and the forces that promoted or hindered that expansion.
- Chapter 4 moves beyond the focal strategies to explore other ways in which the DEI influenced the participating colleges.
- Chapter 5 considers the extent to which the specific DEI focal strategies and the initiative as a whole are associated with improved student outcomes.
- Chapter 6 reflects on the DEI's lessons for funders, policymakers, and practitioners.

## Chapter 2

# The DEI Colleges and Their Focal Strategies

This chapter presents a further backdrop for the rest of the report. It describes the 15 colleges that participated in the Developmental Education Initiative (DEI). It also discusses the characteristics of the focal strategies that colleges put in place.

### Key Findings

- The colleges were highly varied in their characteristics and in the characteristics of their students.
- The great majority of the focal strategies entailed either instructional reforms or student supports.
- The focal strategies were almost evenly divided between ones that were new and ones that were scaled up from existing interventions.
- The majority of focal strategies aimed to help students move more quickly through developmental education or to provide them with academic and/or personal support.

### The Participating Colleges

As early participants in the Achieving the Dream (AtD) national reform network, the colleges participating in the DEI had expressed a strong commitment to using data to improve programs and achieve better outcomes for their students. Aside from this common trait, the colleges differ in their institutional characteristics and in the characteristics of their students, as Tables 2.1a and 2.1b make clear.

Three of the colleges are located in large cities (Cleveland, El Paso, and Houston); four are in small towns or rural areas; and the remainder are in small- to medium-size cities or their suburbs. In fall 2010 (the most recent year for which data are available), six colleges enrolled fewer than 5,000 students, and six had 20,000 students or more, with the Houston Community College System serving more than 60,000 students.

Women and students under age 25 constituted the majority across the colleges. The majority of colleges also enrolled more part-time than full-time students. Seven colleges predominantly served students of color, primarily black and Hispanic students; at three additional

The Developmental Education Initiative

Table 2.1a

Characteristics of Colleges Participating in the Developmental Education Initiative, Part I

	Coastal Bend College	Cuyahoga Community College District	Danville Community College	Eastern Gateway Community College	El Paso Community College	Guilford Technical Community College	Housatonic Community College	Houston Community College
Location	Beeville, TX	Cleveland, OH	Danville, VA	Steubenville, OH	El Paso, TX	Jamestown, NC	Bridgeport, CT	Houston, TX
Degree of urbanization	Small town/rural	Large city	Small city	Small city	Large city	Suburb of midsize city	Midsize city	Large city
Number of campuses	4	3 <sup>a</sup>	1	1	5	4	1	18
Published in-district tuition and fees <sup>b</sup> (\$)	2,400	2,537	3,257	2,790	1,690	1,981	3,406	1,394
<b>Fall 2010 enrollment</b>								
Total enrollment	4,348	31,250	4,534	2,209	29,909	14,789	6,197	60,303
Full-time students (%)	40	41	38	55	39	61	38	31
Part-time students (%)	60	59	62	45	61	39	62	69
Male (%)	39	38	41	40	43	44	38	41
Female (%)	61	62	59	60	57	56	62	59
Black, non-Hispanic (%)	3	33	40	11	2	44	27	29
White, non-Hispanic (%)	29	54	57	75	9	44	37	18
Hispanic (%)	65	4	2	1	85	4	24	31
American Indian, Alaska Native, Asian, or Pacific Islander (%)	1	2	1	2	1	4	3	10
Race/ethnicity unknown (%)	2	5	1	11	<1	3	6	1
Foreign/nonresident <sup>c</sup> (%)	<1	2	<1	<1	2	1	1	10
Two or more races (%)	<1	<1	<1	1	<1	1	1	1
Under age 25 (%)	NA	50	65	59	68	54	59	55

(continued)



**Table 2.1a (continued)**

	North Central State College	Norwalk Community College	Patrick Henry Community College	Sinclair Community College	South Texas College	Valencia College	Zane State College	Average (unweighted)
Location	Mansfield, OH	Norwalk, CT	Martinsville, VA	Dayton, OH	McAllen, TX	Orlando, FL	Zanesville, OH	
Degree of urbanization	Small town/rural	Small city	Small town/rural	Midsize city	Midsize city	Midsize city	Small town/rural	
Number of campuses	2	1	1	1 <sup>a</sup>	5	8	1	
Published in-district tuition and fees <sup>b</sup> (\$)	3,114	3,386	3,280	1,735	2,364	2,752	4,130	2,681
<b>Fall 2010 enrollment</b>								
Total enrollment	3,635	6,740	3,289	21,994	27,692	41,583	2,857	17,422
Full-time students (%)	39	38	50	46	33	43	68	44
Part-time students (%)	61	62	50	54	67	57	32	56
Male (%)	37	41	39	43	43	44	42	41
Female (%)	63	59	61	57	57	56	58	59
Black, non-Hispanic (%)	6	16	25	15	<1	17	5	18
White, non-Hispanic (%)	86	40	71	67	1	38	90	48
Hispanic (%)	1	24	2	1	87	29	1	24
American Indian, Alaska Native, Asian, or Pacific Islander (%)	1	4	1	2	<1	5	1	3
Race/ethnicity unknown (%)	5	11	1	14	9	9	2	5
Foreign/nonresident <sup>c</sup> (%)	<1	3	<1	1	3	2	0	2
Two or more races (%)	1	2	1	1	<1	1	1	1
Under age 25 (%)	54	59	56	49	74	68	50	59

SOURCES: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), and the colleges' Web sites.

NOTES: NA = not available. Rounding may cause slight discrepancies in sums and differences.

<sup>a</sup>College has added one campus since the start of the grant.

<sup>b</sup>Student expense data are for full-time, first-time, degree- or certificate-seeking students in the 2010-2011 school year.

<sup>c</sup>Race/ethnicity is unknown.

The Developmental Education Initiative

Table 2.1b

Characteristics of Colleges Participating in the Developmental Education Initiative, Part II

	Coastal Bend College	Cuyahoga Community College District	Danville Community College	Eastern Gateway Community College	El Paso Community College	Guilford Technical Community College	Housatonic Community College	Houston Community College System
<b><u>Developmental education referral<sup>a</sup> (%)</u></b>								
Students referred to developmental math	32	70	66	31	69	61	53	58
Students referred to developmental English	27	40	27	22	31	35	63	22
Students referred to developmental reading	25	1	7	9	41	32	64	18
Students referred to any developmental education	34	72	70	40	73	67	69	60
<b><u>Financial aid<sup>b</sup></u></b>								
Any financial aid received (%)	85	66	79	84	81	74	66	57
Institutional grant aid received (%)	12	2	15	24	3	5	26	3
Average institutional grant aid (\$)	879	990	967	2,052	1,457	1,379	1,447	625
<b><u>Retention and completion</u></b>								
Retention rate for first-time students <sup>c</sup>								
Full-time students (%)	45	51	64	56	70	56	63	61
Part-time students (%)	40	36	50	31	52	43	54	49
Graduation rate <sup>d</sup> (%)	21	4	23	23	11	13	8	12
Transfer-out rate <sup>e</sup> (%)	19	10	11	15	21	23	20	27

(continued)

**Table 2.1b (continued)**

	North Central State College	Norwalk Community College	Patrick Henry Community College	Sinclair Community College	South Texas College	Valencia College	Zane State College	Average (unweighted)
<b><u>Developmental education referral<sup>a</sup> (%)</u></b>								
Students referred to developmental math	57	NA	73	55	38	48	61	55
Students referred to developmental English	40	NA	50	45	40	29	53	37
Students referred to developmental reading	21	NA	42	30	38	36	46	29
Students referred to any developmental education	65	NA	78	64	62	59	75	63
<b><u>Financial aid<sup>b</sup></u></b>								
Any financial aid received (%)	87	61	83	75	90	84	98	78
Institutional grant aid received (%)	9	27	0	8	0	15	16	11
Average institutional grant aid (\$)	1,076	1,728	1,018	992	1,459	1,271	2,424	1,318
<b><u>Retention and completion</u></b>								
Retention rate for first-time students <sup>c</sup>								
Full-time students (%)	47	66	52	54	60	70	56	58
Part-time students (%)	43	42	39	47	50	56	45	45
Graduation rate <sup>d</sup> (%)	13	8	27	8	13	40	23	16
Transfer-out rate <sup>e</sup> (%)	NA	21	11	20	10	13	NA	17

SOURCES: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), and colleges' reports to JBL.

NOTES: NA = not available. Rounding may cause slight discrepancies in sums and differences.

<sup>a</sup>Developmental education referral rates measure the percentage of an incoming student cohort who are referred to developmental math, English, or reading, respectively. Rates are calculated as an average from three academic years: 2008-2009, 2009-2010, and 2010-2011.

<sup>b</sup>Financial aid data refer to full-time, first-time, degree- or certificate-seeking students for the 2009-2010 academic year.

<sup>c</sup>The retention rate measures the percentages of first-time students who began their studies in fall 2009 and who returned to the institution in fall 2010.

<sup>d</sup>Graduation rates are for the cohort of full-time, first-time, degree- or certificate-seeking students who began their studies in fall 2007. They measure the percentage of these students who complete a degree or certificate within 150 percent of the normal time to program completion.

<sup>e</sup>Transfer-out rates measure the percentage of full-time, first-time students entering in fall 2007 who are known to have transferred to another institution within 150 percent of the normal time to program completion.

schools, between one-third and one-half the students belonged to one of these two groups. At all the colleges, the majority of students received financial aid.

Across all the colleges, an average of 55 percent of students were referred to developmental mathematics courses; 29 percent were referred to developmental reading courses; and 37 percent were referred to developmental writing courses (often referred to as “developmental English” and, in some instances, integrated with developmental reading). Nontraditional and academically underprepared students typically have high dropout rates. Some 53 percent of full-time students and 36 percent of part-time students who enrolled in the DEI colleges for the first time in fall 2007 enrolled for a second year, with the rest interrupting their academic careers at the college or dropping out altogether. Some 16 percent of the first-time, full-time, degree- or certificate-seeking students who entered in fall 2007 received a degree or certificate within 150 percent of the minimum time necessary for program completion, while another 17 percent of these students transferred to another institution within this time period.

## The Focal Strategies

Collectively, the 15 community colleges that participated in the DEI implemented 46 focal strategies. Table 2.2 provides an overview, presenting the focal strategies that each college adopted, along with three salient attributes: the strategy’s *type*, whether it was *new* or *scaled up*, and — especially important for this report — the strategy’s *objective*. Each of these is discussed below.

### Strategy Type

Table 2.2 classifies each strategy as fitting into one of four broad types.

- **Policy strategies** are designed to change collegewide policies and practices. These policies commonly relate to placement, registration, enrollment, and course requirements or sequencing.
- **Instructional strategies** entail changes in the content of developmental courses and the modality by which these courses are taught. They also include two or more courses linked into “learning communities,” ideally with mutually reinforcing themes and assignments.
- **Support strategies** are efforts to address both academic and personal issues that students may confront. Such strategies range from advising to tutoring.

## The Developmental Education Initiative

**Table 2.2**

### Focal Strategies of the DEI Colleges

College	Strategy	Strategy Type <sup>a</sup>	New or Scaled Up <sup>b</sup>	Strategy Objective <sup>c</sup>
Coastal Bend College	• Mandate for continuous enrollment in developmental sequence	Policy	New	NA
	• Case management	Support	New	Support
	• Compression of developmental and college-level English	Instructional	New	Acceleration
	• Fast Track (short, intensive English and reading courses)	Instructional	New	Acceleration
Cuyahoga Community College	• Supplemental instruction in English and math	Support	Scaled up	Support
	• Pairing of Math 950 with Math 850 (student support course)	Instructional	Scaled up	Support
	• Mentoring for students in paired math strategy and for new students on Metro campus	Support	Scaled up	Support
Danville Community College	• Modularization in math through MyMathLab	Instructional	New	Acceleration
	• Blocking late registration for students with developmental placements in math, reading, <i>and</i> writing	Policy	New	NA
	• Preparation for Compass placement test	Support	New	Avoidance
Eastern Gateway Community College	• Mandate to complete developmental requirements before proceeding to college-level classes	Policy	New	NA
	• Redesign of developmental math	Instructional	New	Acceleration
	• Redesign of developmental English	Instructional	New	Acceleration
	• Integration of low-level developmental education with ABLE programs	Instructional	New	NA

(continued)

**Table 2.2 (continued)**

College	Strategy	Strategy Type <sup>a</sup>	New or Scaled Up <sup>b</sup>	Strategy Objective <sup>c</sup>
El Paso Community College	• Pretesting Retesting Education Program (PREP) - placement test orientation	Support	Scaled up	Avoidance
	• Self-paced, computerized math through Math Emporium	Instructional	New	Acceleration
	• Case management	Support	New	Support
Guilford Technical Community College	• Specialization and extension of SOAR (Student Orientation, Advising, and Registration) program for students placing into two or more areas of developmental education	Support	Scaled up <sup>d</sup>	Support
	• Online or in-person review for college placement test	Support	New	Avoidance
	• Light-touch advocacy for all students; intensive case management for students placing into two or more areas of developmental education	Support	New	Support
Housatonic Community College	• Modularized, open-entry/open-exit (OE/OE) English	Instructional	New	Acceleration
	• Modularized, OE/OE algebra	Instructional	Scaled up	Acceleration
	• Modularized, OE/OE pre-algebra	Instructional	Scaled up	Acceleration
Houston Community College System	• Mandated freshman success/ Guided Studies (GUST) course for all first-time students	Support	Scaled up	Support
	• Learning community linking GUST to developmental math and English	Instructional	Scaled up	Support
	• Eight-week math bridge courses to help students on the cusp move up a developmental course level	Support	Scaled up	Acceleration

(continued)

**Table 2.2 (continued)**

College	Strategy	Strategy Type <sup>a</sup>	New or Scaled Up <sup>b</sup>	Strategy Objective <sup>c</sup>
North Central State College	• Redesign of assessment and placement, including cut-points for developmental placement	Policy	New	NA
	• One-week fast-track math boot camp	Support	Scaled up	Avoidance
	• Expansion of tutoring - writing	Support	Scaled up	Support
	• Expansion of tutoring - math	Support	Scaled up	Support
Norwalk Community College	• Learning community pairing upper-level developmental writing with a student success course	Instructional	Scaled up	Support
Patrick Henry Community College	• Active/cooperative learning pedagogy	Instructional	Scaled up	Instructional relevance
	• Enhanced advising (creation of student database to identify high-risk students and enhance "continuity of care" across advising staff)	Support	Scaled up	Support
	• Fast Track: Accelerated Learning Program (ALP) pairing highest-level developmental English with college-level English	Instructional	Scaled up	Acceleration
Sinclair Community College	• Early Support Program (case management in eight high school "college and career centers")	High school	New <sup>c</sup>	NA
	• Developmental math modules and boot camp	Instructional	New	Acceleration
	• Accelerated Learning Program (ALP) pairing highest-level developmental English with college-level English	Instructional	New	Acceleration

(continued)

**Table 2.2 (continued)**

College	Strategy	Strategy Type <sup>a</sup>	New or Scaled Up <sup>b</sup>	Strategy Objective <sup>c</sup>
South Texas College	• Contextualization of developmental reading and English curricula	Instructional	New	Instructional relevance
	• Case management for developmental reading and English students (face-to-face)	Support	Scaled up	Support
	• Case management for developmental reading and English students (e-mail/phone)	Support	Scaled up	Support
Valencia College	• Learning communities pairing developmental courses with student success course <sup>f</sup>	Instructional	Scaled up	Support
	• Supplemental Learning Leaders in the classrooms <sup>f</sup>	Support	Scaled up	Support
	• High school bridge program (scholarships and intensive supports for 250 high-risk, low-income high school students)	High school	Scaled up	NA
Zane State College	• Paired and compressed developmental math course	Instructional	New	Acceleration
	• Pairing developmental reading or English with college-level courses	Instructional	New	Instructional relevance
	• Scaled-up advising for developmental reading and English students	Support	Scaled up	Support

(continued)



**Table 2.2 (continued)**

NOTES: NA = not applicable.

<sup>a</sup>Strategies are categorized into four broad types: (1) "policy" strategies are those designed to change institutionwide policies and practices around placement, registration, enrollment, and course requirements/sequencing; (2) "support" strategies are those designed to improve academic and student service supports beyond the traditional classroom; (3) "instructional" strategies are those designed to reach students in the classroom through changes in curriculum and instruction; and (4) "high school" strategies are those focused on precollege interventions.

<sup>b</sup>At a given college, a strategy is categorized as "new" if it had not been implemented at the college prior to the DEI and as "scaled up" if it was expanded from a preexisting intervention.

<sup>c</sup>The four strategy objectives — acceleration, avoidance, instructional relevance, and support — are drawn from *Unlocking the Gate: What We Know About Improving Developmental Education* (Zachry Rutschow and Schneider, 2011). The authors offer the following definitions: *avoidance* strategies help students avoid developmental education by shoring up their skills before they enter college; *acceleration* strategies are interventions that accelerate students' progress through developmental education by shortening the timing or content of their courses; *contextualization* strategies are programs that provide basic skills together with occupational or college-content coursework (including learning communities); and *support* strategies are programs that enhance the supports for developmental-level learners, such as advising or tutoring. For the purposes of this report, "contextualization" has been broadened into "instructional relevance" to better encompass the colleges' strategies in this category.

<sup>d</sup>This strategy was implemented at Guilford Tech under Achieving the Dream but has been refined for a narrower group of students (those with two or more developmental education placements).

<sup>e</sup>This strategy was previously in place for Sinclair students but is being brought into the high schools under the DEI. It is categorized as "new" due to the unique challenges of working with new institutional partners and a different pool of students.

<sup>f</sup>This is not supported by DEI funding.

- **High school strategies** assist high school students (who may or may not subsequently enroll in the college), often with comprehensive services.<sup>1</sup>

Figure 2.1 illustrates the distribution of the focal strategies by type. The great majority of strategies fall under two strategy types — instructional reforms and student supports — which account, respectively, for 46 percent and 41 percent of all strategies. Most colleges (13 of 15) adopted at least one instructional strategy; 11 adopted at least one support strategy; and a majority (9 colleges) adopted at least one of each of these two kinds. Institutionwide policy

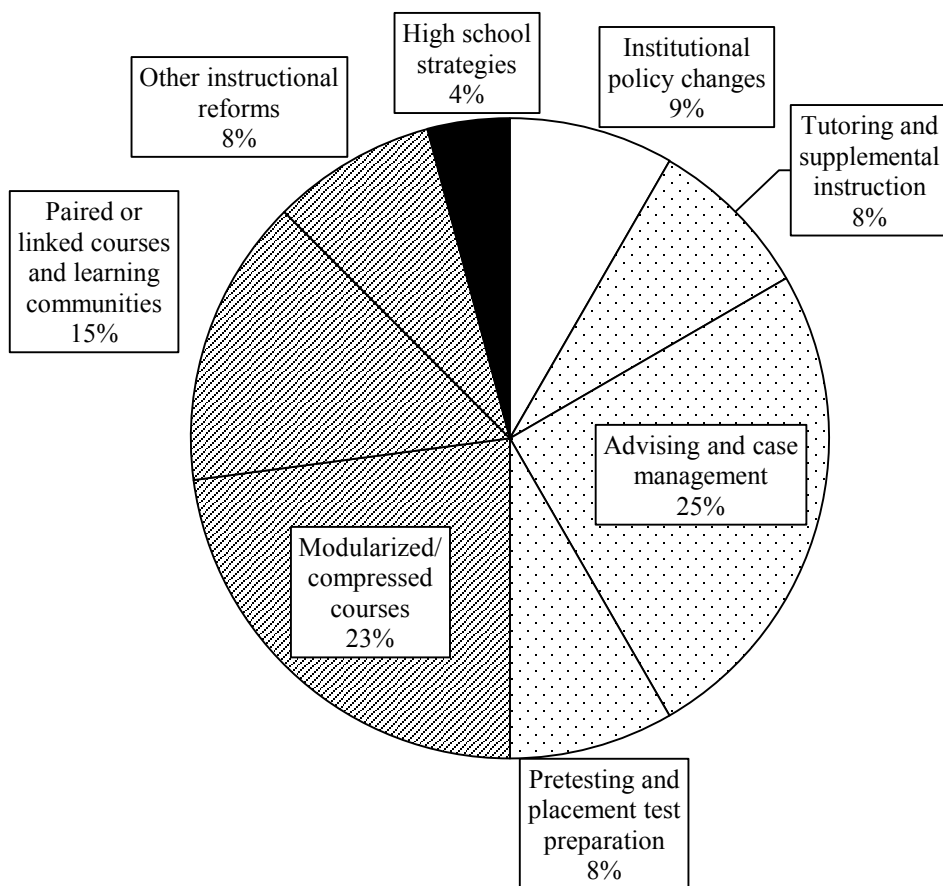
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<sup>1</sup>For example, at Sinclair Community College, the Early Support Program provided comprehensive case management, including assistance with college applications and financial aid, to students in local high schools serving large proportions of low-income students.

## The Developmental Education Initiative

Figure 2.1

### Distribution of Focal Strategies Implemented at the 15 DEI Colleges, by Strategy Type



changes and high school interventions were less frequently cited as focal strategies.<sup>2</sup>

### **New Versus Scaled-Up Interventions**

Table 2.2 also indicates whether each focal strategy was *new or scaled up* from AtD (or even earlier) beginnings.

The strategies were virtually evenly divided between those that were new (that is, developed specifically for the colleges' participation in the DEI) and those that were expanded from preexisting interventions. Four of the colleges chose all new strategies; five chose to scale up all their strategies; and the remaining six colleges decided to mix new and scaled-up strategies. While support strategies (tutoring, advising, and placement test preparation) were more frequently scaled up, instructional reforms were more frequently new.

### **Strategy Objective**

The rightmost column of Table 2.2 includes what is, for the purposes of this report, the most important typology: the strategy's objective. The categorization of strategies by objective guides the analyses of scaling up and of outcomes associated with the strategies that appear in Chapters 3 and 5, respectively. This typology is especially useful because it is consistent with the classificatory scheme used in a recent literature review of what is known about effective practices in developmental education.<sup>3</sup> Sorting the DEI focal strategies in this manner enables this report both to be informed by and to further inform that body of literature.

Four principal objectives guide the focal strategies:

- **Acceleration strategies** enable students to move more quickly through developmental education and into college-level work by shortening the timing or content of their developmental coursework; they include computerization, individualization, modularization, or compression of courses, as well as pairings of college-level and developmental courses.
- **Avoidance strategies** enable students to avoid unnecessary courses or to place out of developmental education entirely; they generally take the form of placement test preparation strategies.

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<sup>2</sup>As discussed in Chapter 4, some colleges also adopted policy changes that they did not count among their focal strategies. The colleges were advised to include as focal strategies ones whose scaling up over time could be measured. Policy changes, in contrast, tend to affect all students (or all students subject to the policies) at once.

<sup>3</sup>See Zachry Rutschow and Schneider (2011).

- **Support strategies** impart general skills, strengthen specific academic skills, or provide academic and/or personal counseling. Some examples of support strategies include study skills courses, tutoring/supplemental instruction, and case management or advising interventions.
- Approaches aimed at **instructional relevance** alter curriculum and/or instructional modalities to make courses more engaging to students; they include contextualized, active, or cooperative learning.

Table 2.3 further defines the general kinds of instructional and support approaches that the DEI colleges put in place to advance each of these objectives. The table also lists the specific strategies that colleges implemented under these approaches.<sup>4</sup>

Figure 2.2 shows the distribution of focal strategies, by objective, across the 15 colleges. Of the 40 strategies with an objective that was readily identifiable, 14 strategies fell under the acceleration objective, and 19 fell under the objective of support. Four strategies sought to help students avoid unnecessary developmental coursework, and three entailed implementing new approaches to make instruction more engaging and relevant.

The objectives of the five focal strategies involving policy changes could not be classified using this schema.<sup>5</sup> The two focal strategies involving high school students were also not amenable to ready categorization, because such approaches typically pursue multiple goals. For example, strategies directed toward low-income high school students may be intended to help

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<sup>4</sup>The relationship between strategy type and objective is not straightforward. All strategies that are directed toward college students and whose type is classified as “support” also have support as their objective. Instructional strategies, in contrast, can serve different objectives. Thus, modularized classes aim at accelerating students through the developmental sequence; contextualized curricula seek to make instruction more relevant to students; and learning communities that pair a developmental class with a college success class strive to offer students the supports they need for college success.

In classifying strategies according to their objective, it was critical to look at the content of the strategy, not just its label. For example, a learning community that was established by linking two courses was categorized as a support strategy if one of the paired courses was a study skills or “student success” course; it was seen as an acceleration strategy if it entailed placement in a college-level course with extra time allocated for shoring up basic skills; and it was considered to be a contextualization strategy if a developmental course was paired with a college-level course whose subject matter provided the basis for skills acquisition and for classroom assignments. That said, researchers at times had to decide between two plausible options. Thus, linked courses at Zane State College were deemed to be contextualization strategies, although they also served to accelerate progress (because the college-level course was completed in the same term as the developmental course, rather than back-to-back).

<sup>5</sup>A policy to bar late registration, for instance, seeks to ensure that students who are already behind academically do not fall further behind by enrolling in classes that are already in session.

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Table 2.3

Objectives of the DEI Focal Strategies, General Approaches,  
and Specific Interventions to Meet Each Objective

Objective and Approach	Definition	Colleges' Focal Strategies
<b><u>Acceleration</u></b>	Approaches that enable students to move more quickly through developmental courses and into college-level work	
Course computerization and individualization/modularization/compression	Typically, heavily computerized courses with instructors available for assistance as needed, and students proceed at their own pace. A traditional semester-long course may be divided into shorter discrete units, or modules, that are designed to improve a particular skill, with students taking only the modules they need to strengthen areas of weakness. Alternatively, the contents of two developmental courses may be integrated into a single, intensive one-semester course.	Coastal Bend – Fast Track Danville – modularized math Eastern Gateway – math redesign Eastern Gateway – English redesign El Paso – Math Emporium Housatonic – open-entry/open-exit English Housatonic – open-entry/open-exit pre-algebra Housatonic – open-entry/open-exit algebra Houston – math bridge course Sinclair – modularized math Zane – compressed math
College-level and developmental course-pairing	Placement of developmental students in college-level classes with additional class time focused on academic skill-building	Coastal Bend – linked English Patrick Henry – ALP Sinclair – ALP
<b><u>Avoidance</u></b>	Approaches that enable students to avoid unnecessary developmental coursework, helping them place into a higher level or out of developmental education altogether	

(continued)

**Table 2.3 (continued)**

Objective and Approach	Definition	Colleges' Focal Strategies
Placement test preparation	Short, intensive courses to enable students taking (or retaking) the placement test to score high enough to place out of developmental classes	Danville – Compass test preparation El Paso – PREP Guilford Tech – placement test review North Central State – math boot camp
<b><u>Support</u></b>	Approaches that impart general skills, strengthen specific academic skills, or provide academic and/or personal counseling	
Study skills courses	Stand-alone or paired with other courses, courses to help students develop study skills and “habits of mind” (for example, time management)	Cuyahoga – paired math and student support Houston – GUST (stand-alone) Houston – GUST paired with developmental math or English Norwalk – paired writing and student success Valencia – paired developmental education and student success
Tutoring/supplemental instruction	Academic assistance to aid course-passing. In supplemental instruction, assistance is provided by students who serve as in-class role models.	Cuyahoga – supplemental instruction North Central State – writing tutoring North Central State – math tutoring Valencia – supplemental instruction
Case management/mentoring/ advising	Provided by professional staff or volunteers, assistance to students in course selection, progress monitoring, personal counseling, or other services to help students adjust to college life.	Coastal Bend – case management Cuyahoga – mentoring El Paso – case management Guilford Tech - SOAR Guilford Tech – advocacy Patrick Henry – advising Sinclair – Early Support Program <sup>a</sup> South Texas – face-to-face case management South Texas – case management by phone or e-mail Valencia – high school bridge <sup>a</sup> Zane – advising

(continued)

**Table 2.3 (continued)**

Objective and Approach	Definition	Colleges' Focal Strategies
<b><u>Instructional relevance</u></b>	Approaches that alter curriculum and/or instructional modalities to make courses more engaging to students	
Contextualization	Curriculum that integrates academic skills with subject matter covered in college-level academic courses or technical courses.	South Texas – contextualized reading and English Zane – linked developmental education and college-level courses
Active/cooperative learning	Instruction emphasizing in-class group work and interactive learning	Patrick Henry – cooperative learning

NOTES: ALP = Accelerated Learning Program.

PREP = Pretesting/Retesting Education Program.

GUST = Guided Studies.

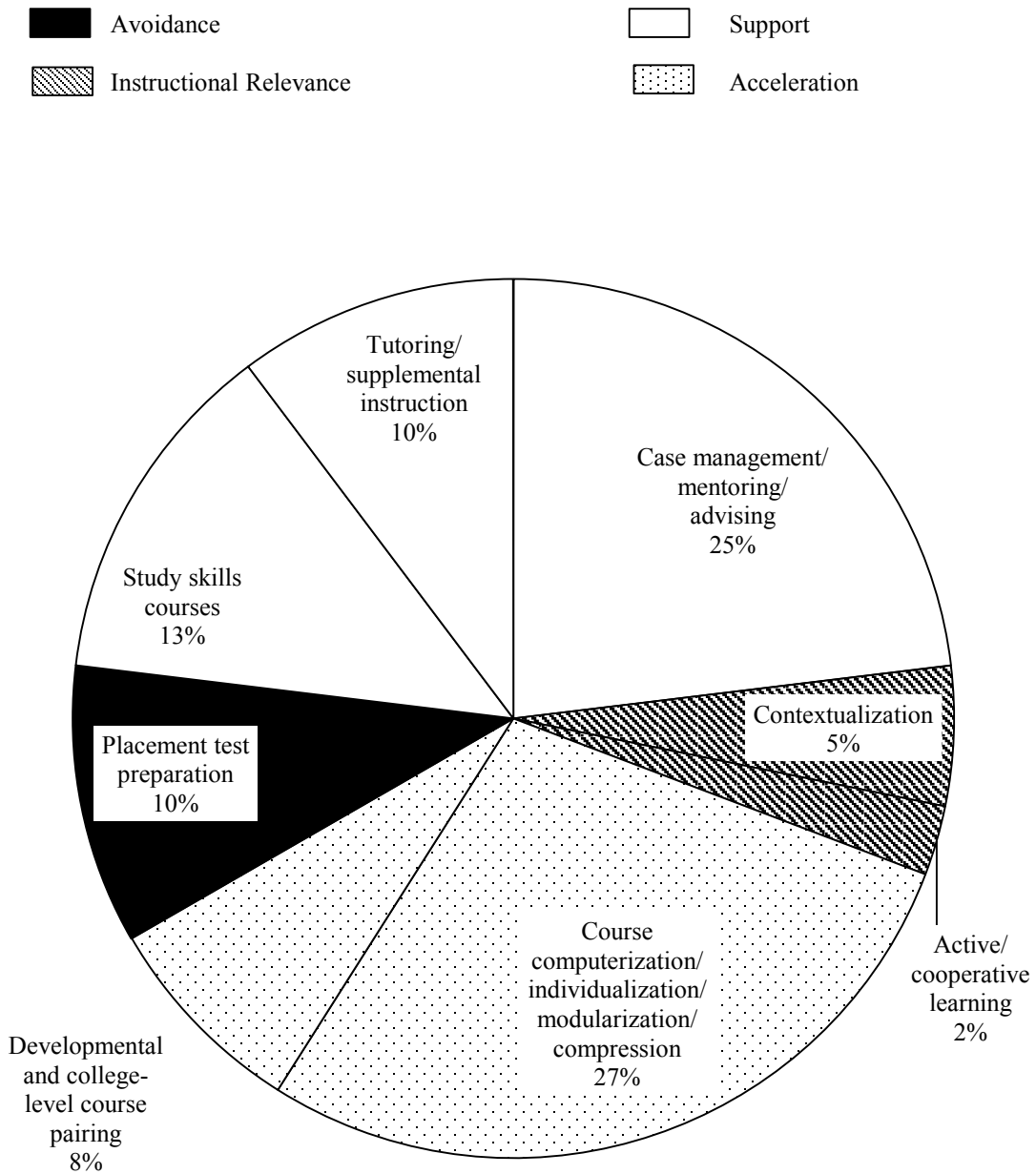
SOAR = Student Orientation, Advising, and Registration.

<sup>a</sup>While these strategies are classified as having a "Support" objective, they in fact had multiple goals.

## The Developmental Education Initiative

Figure 2.2

### Distribution of Focal Strategies Implemented at the 15 DEI Colleges, by Strategy Objective





them secure financial aid, to provide counseling, and to strengthen their academic skills so as to avoid the need for developmental classes. The analyses in subsequent chapters that deal with the focal strategies exclude these seven strategies whose objective cannot be readily classified. For some analyses presented in these chapters, additional focal strategies are excluded because other data required for the analyses are missing. Thus, different analyses include slightly different numbers of focal strategies.

Chapter 3 discusses the colleges' experiences in scaling up their focal strategies.



## Chapter 3

# Scaling Up the Focal Strategies

This is the first of two chapters on the implementation of the Developmental Education Initiative (DEI). The chapter responds to a major charge of the evaluation: to assess the extent of scaling up of the focal strategies discussed in Chapter 2 and to understand the conditions that have facilitated or impeded scale-up at the 15 DEI colleges. To address these issues, the analysis employs both quantitative data and qualitative data.

### Key Findings

- Across the colleges, the proportion of incoming developmental students served by at least one focal strategy more than doubled between fall 2009 (the initiative's first semester) and fall 2011 (the last semester for which data were available), rising from 18 percent to 41 percent.
- Colleges generally did not meet the ambitious participation goals that they had set for serving students with their individual focal strategies.
- While colleges were not expected to move from serving “more to most” students within the time frame of the DEI demonstration, by fall 2011, three of the colleges were able to serve the large majority of their incoming developmental students with one of their key strategies; 11 colleges, however, reached less than half of their incoming developmental students with a focal strategy and thus had a considerable way to go in meeting this mark.
- There was no difference in the extent of scale-up between new strategies and preexisting ones.
- Resource adequacy, communication, engagement, and a commitment to uniform instructional practice were especially important factors promoting large-scale implementation of the focal strategies; a college's small size, by facilitating communication, may also have made scale-up easier.
- Several instructional strategies were notable because they *began* at scale, serving all students from the beginning and reflecting a departmentwide or institutionwide commitment to uniform instructional practice.
- In contrast, factors that worked against full scale-up included institutional reluctance to impose mandates about how students should learn and instructors

teach, students' own needs and priorities, a desire to scale *back* when strategies appeared to be ineffective, and a desire to evaluate the strategies' apparent effectiveness before moving forward.

## Progress in Scaling Up

To determine the extent of scale-up across time, this report uses participation data that the colleges submitted to JBL Associates. It gauges scale-up in three ways. First, it examines the proportion of students at each college who participated in *any* of the college's focal strategies. Then, it measures the number of students participating in *each* strategy at a college against two standards: the participation goal that the college set for itself and the number of students identified as being in the strategy's target population. As noted in Chapter 1, in the summer of 2009, after the Kickoff Institute, colleges were asked to identify their focal strategies and to specify the target population and the number of students to be served by each focal strategy during each of the three subsequent academic years. These figures established the colleges' participation goals during the first two years of the demonstration. Introduced at the beginning of the third year, the "more to most" framework supplied a new way to think about scale-up objectives — although colleges were not, in fact, expected to serve most students by the end of the third year. The use of the two kinds of standards in the analysis of participation presented here allows progress to be measured against both sets of goals.

### Scaling Up at the College Level: Participation in Any Focal Strategy

Table 3.1 shows, for every college but one, the number and percentage of incoming developmental students who were touched by at least one focal strategy in their first semester at the college. It presents these statistics for two points in time: fall 2009 (the DEI's kickoff semester) and fall 2011 (the most recent semester for which participation data were submitted).<sup>1</sup> Policy interventions are not included in the calculations for Table 3.1; the table considers only interventions that treat students on an individual basis.<sup>2</sup>

Across the 14 colleges represented in Table 3.1, the proportion of incoming developmental students served by at least one focal strategy more than doubled over the two years, averaging from 18 percent to 41 percent. All but one college served a higher proportion of

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<sup>1</sup>The DEI itself continued through spring 2012, and some colleges may have continued to scale up through the spring term.

<sup>2</sup>As discussed below in this chapter, some schools were unable to track individual student participation in some strategies; these strategies are also excluded from Table 3.1. One college did not submit participation data for fall 2011; the college's data for spring 2011 are used instead. One college is excluded from Table 3.1 because its data did not indicate the developmental status of individual incoming students.

## The Developmental Education Initiative

**Table 3.1**

### Proportion of Incoming Developmental Students Served by at Least One Focal Strategy, Fall 2009 and Fall 2011

College	Fall 2009		Fall 2011	
	N	%	N	%
College A	31	3	154	14
College C	921	18	1,704	28
College D	653	25	1,082	46
College E	156	5	317	10
College F	64	63	145	98
College G	0	0	425	100
College H	35	7	43	11
College I	0	0	170	7
College J	9	2	127	58
College K	230	5	600	17
College L	511	7	3,724	42
College M	42	11	40	14
College N	254	47	402	91
College O	1,047	53	778	35
Average		18		41

SOURCE: MDRC and CCRC calculations from colleges' reports to JBL.

NOTE: Data for College B are unavailable.

developmental students over time — an increase that is especially noteworthy, given the growth in the colleges' enrollment in general and their developmental populations in particular.

In addition, three colleges — Eastern Gateway Community College, Patrick Henry Community College, and Zane State College — clearly moved from “more to most,” serving almost all of their incoming developmental populations with at least one strategy in fall 2011. Perhaps the most prominent feature of these three colleges is their relatively small size: All three colleges serve fewer than 4,000 students. Being small did not guarantee broad scale-up. Another college of comparable size served less than 20 percent of its students. Still, being small may have facilitated communication about the DEI among the three successful colleges' various stakeholders and may have supported strong collaborations among faculty and staff. Furthermore, the infusion of DEI resources may have made a greater difference for colleges that had fewer students to serve.

In this same vein, a college's very large size may present sizable but not insuperable barriers to scale-up. The Houston Community College System serves some 60,000 students in six colleges on eighteen campuses. Each college is led by its own president, who reports to the university district chancellor. In this context, scaling up developmental education reform requires securing the buy-in of multiple campus presidents and deans within a governance structure that is decentralized and that permits each campus to operate independently. Communicating effectively with faculty across the 18 campuses and maintaining high levels of faculty engagement can be challenging.

Furthermore, successfully engaging a large number of students who are so widely dispersed is no small feat. As an example, Houston advertised its voluntary, non-credit-bearing Math Bridge course to eligible students using robocalls and e-mail blasts. However, the college found that while these "light touch" outreach efforts were effective for reaching students, they were less effective in convincing students to enroll in the course. Administrators concluded that students would have benefited from a "heavy touch" outreach strategy in which advisers explained to students why the course could help them to advance through the developmental sequence. Securing the heavier touch would have required a great deal of cooperation among advisers across the campuses, however, and this outreach strategy was not pursued.

Despite these obstacles, Houston was able to engage a much larger proportion of incoming developmental students in fall 2011 than it had two years earlier.

In addition, it is worth noting that the three small colleges that reached high proportions of students were not able to scale up all their focal strategies to an equal degree. Rather, at two of the three colleges, a single focal strategy was the driving force behind the colleges' ability to serve large proportions of their students. When explaining scale-up, it may well be more useful to examine the characteristics of the strategies themselves, including the factors that support their expansion, than to focus on the characteristics of the individual colleges, which, in any event, are fairly intractable.

### **Scaling Up Individual Focal Strategies: Comparing the Number of Participants with Stated Goals**

A second approach to measuring scale-up compares the goal set for each of 33 focal strategies for the 2010-2011 academic year with the number of students served by the strategy in that year.<sup>3</sup> These goals were generally quite ambitious: For example, 10 colleges set targets

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<sup>3</sup>The 2010-2011 academic year was selected because a full year of participation data is available for each college. (In contrast, only fall data are available for the 2011-2012 academic year.) Moreover, the 2010-2011 academic year represents the midpoint of the initiative. Most colleges' targets for this year were at about two-thirds the level of their final 2011-2012 targets. If colleges were unable to hit this intermediate target, it seems  
(continued)

that met or exceeded the number of incoming developmental students that they had enrolled in the 2008-2009 academic year.

Four strategies reached many more than the number of students originally targeted; indeed, one strategy served double that number, and another four times the goal. The majority of strategies did not attain their target goals, however: 11 of the 31 strategies reached less than a quarter of targeted students; seven strategies, between 25 percent and 49 percent; 4 strategies, between 50 percent and 74 percent; and 5 strategies, between 75 percent and 99 percent.

### **Scaling Up Individual Focal Strategies: Comparing the Number of Participants with the Size of the Target Population**

The evaluation uses a third quantitative approach to assess scale-up. In this approach, the degree of scale for a given strategy during a given semester is defined as the proportion of students identified as being in the target population for the strategy who were actually served by that strategy during the semester. Each college had the latitude to define the target population for each of its focal strategies; thus, the targeted populations vary across colleges and strategies.<sup>4</sup>

This measure of scale-up affords a perspective on the colleges' progress in moving from more to most targeted students, although, as noted above, the focal strategies were not expected to serve most eligible students within the three-year demonstration period. The available data permit comparison of the number of students who actually participated in each of 36 focal strategies in fall 2011, when the "more to most" framework was introduced, with the number of students eligible for that strategy. A statistical definition of "most" is not included in the framework; if "most" means a simple majority of students, one-quarter of the focal strategies (9 of the 36) are found to have engaged 51 percent or more of eligible students. If the standard for serving "most" students is raised to 75 percent or higher, then 5 strategies met that standard.

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unlikely that they would be able to achieve their 2011-2012 targets. The analysis excludes strategies for which participation data are missing, as well as strategies for which service targets were not developed (either because these strategies were added later in the planning process or for other reasons).

<sup>4</sup>For example, a strategy designed to support learning in mathematics might target first-term developmental math students, students (whether first-term or continuing) who have not yet completed developmental math, or students (whether developmental or college-ready) who are enrolled in any math course. Moreover, some strategies are targeted at very large populations (for example, students who are enrolled in any math course at a large community college), while others are targeted at very small populations (such as first-semester students who have at least two types of developmental needs and attend a small college).

Figure 3.1 shows the percentage of targeted students served by each strategy in fall 2009 and fall 2011.<sup>5</sup> The figure illustrates three patterns of scale-up:

- For 28 strategies — the large majority — the proportion of the population served was initially less than 30 percent; over time, it remained level or increased slightly, so that the strategy still engaged less than 35 percent of the target population by fall 2011.
- With respect to 8 strategies, the proportion of the population served was initially less than 50 percent, but there was a more substantial increase over time.
- A single strategy reached a very large proportion of the target population in fall 2009 and continued to serve a very large proportion two years later.

### **Factors Associated with Scale-Up: Quantitative Findings**

Quantitative methods were first used to explore whether the characteristics of each intervention are related to its expansion over time. Figure 3.2 shows the extent of scaling-up of strategies that were new with the DEI and of strategies that had previously been in place at the colleges. For both groups of strategies, the figure presents the average percentage of the population served, as well as the percentage range, for fall 2009 and fall 2011.<sup>6</sup> Surprisingly, whether a strategy was new or scaled-up does not seem to be associated with the proportion of the population served at the demonstration's outset in fall 2009. Furthermore, new strategies seem to have been just as successful as (or more successful than) preexisting ones in expanding to serve a larger proportion of the population by fall 2011.

In terms of objective and approach, strategies that fall under the rubric of Instructional Relevance were especially likely to reach large proportions of targeted students, as shown in Figure 3.3 and discussed below. While mentoring and advising strategies reached substantial percentages of participants by fall 2011, qualitative data suggest that some of these strategies could be characterized as fairly “light-touch.”

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<sup>5</sup>Figure 3.1 includes only strategies that were tracked on an individual basis and for which participation information was consistently submitted (N = 37). Appendix A provides further detail regarding how target students' data were collected from each college.

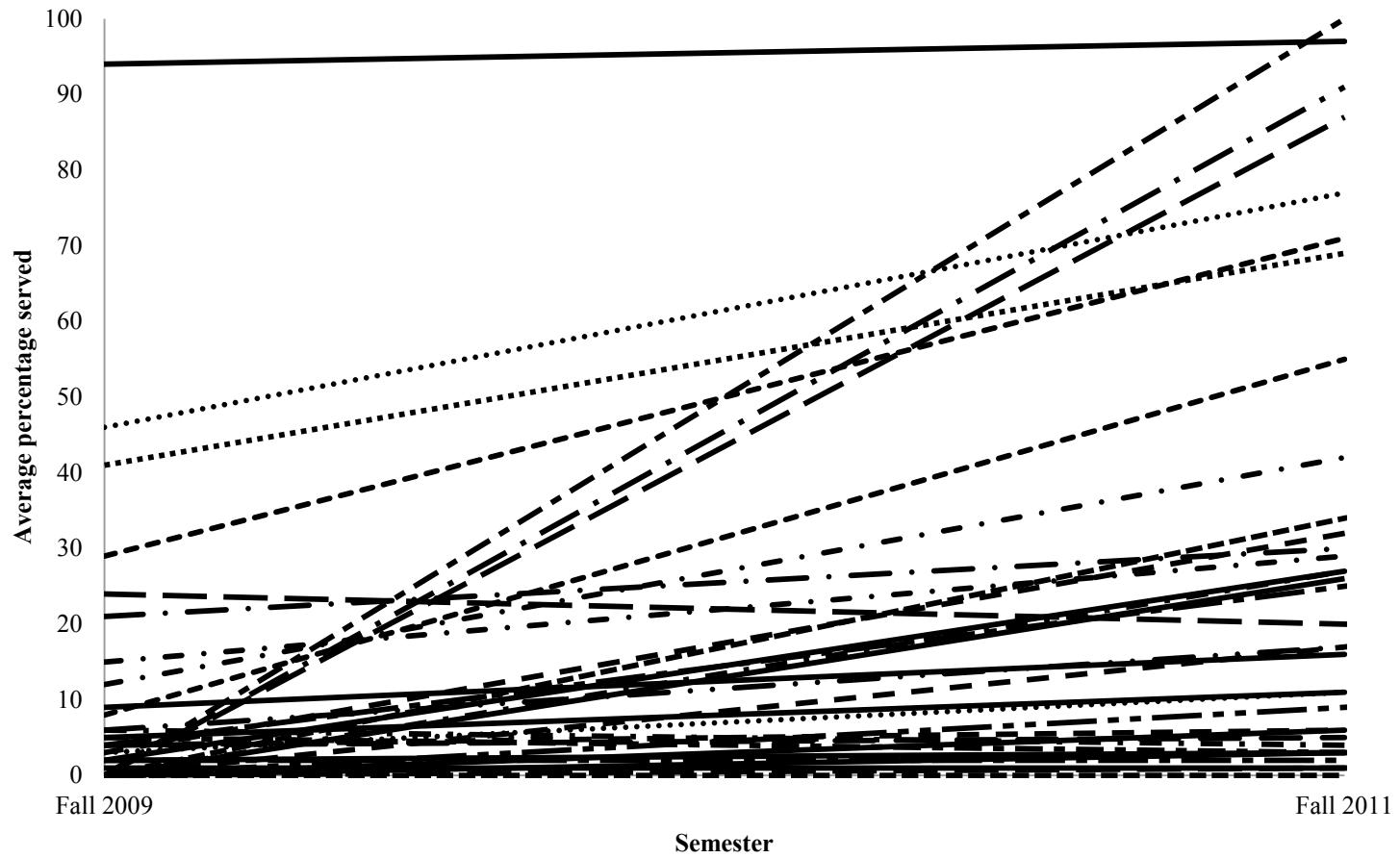
<sup>6</sup>The average percentage is calculated as an unweighted average of all strategies within the category. The range represents the minimum and maximum percentages served by all strategies within the category.



The Developmental Education Initiative

Figure 3.1

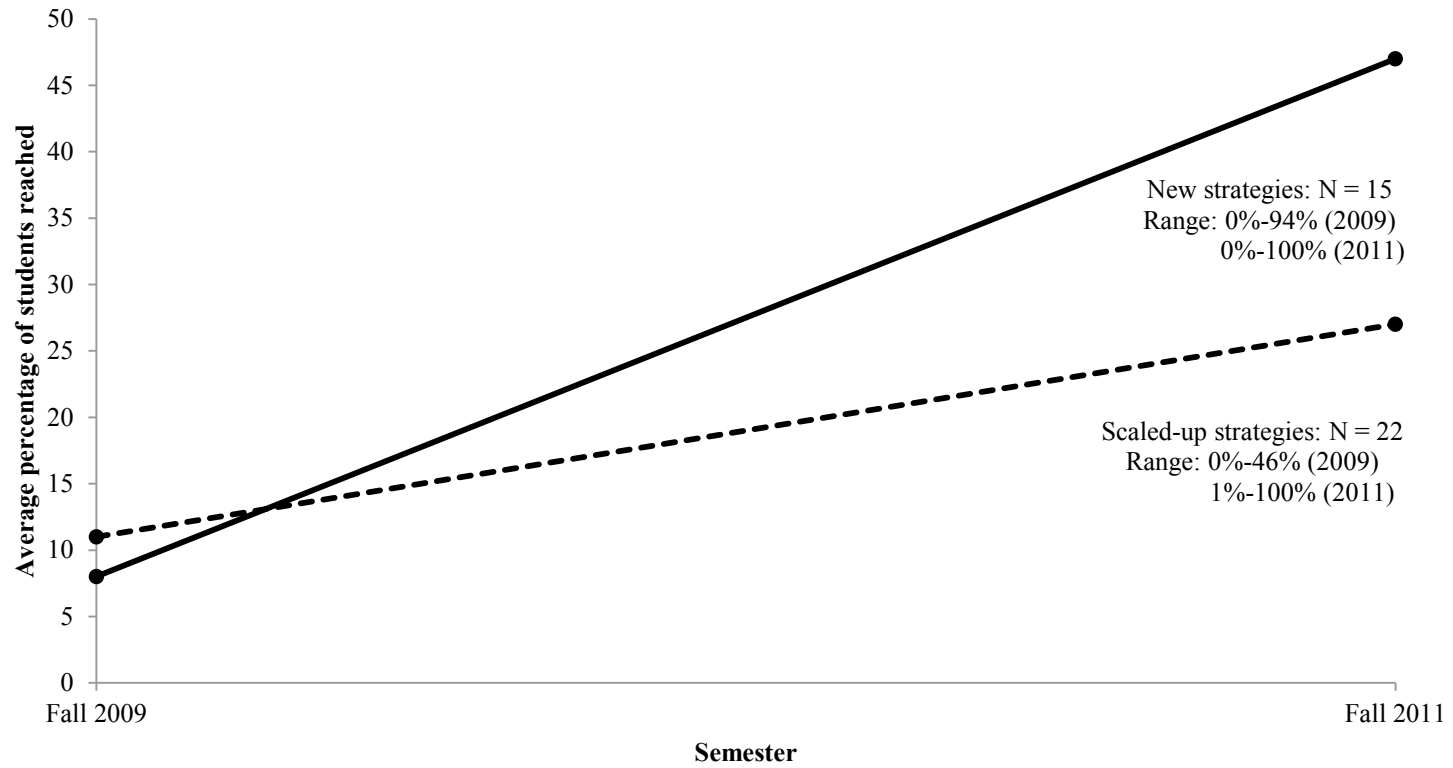
Percentage of Target Population Served in Fall 2009 and Fall 2011 by Each Focal Strategy



The Developmental Education Initiative

Figure 3.2

Percentage of Students Served, by Whether Focal Strategy Was New or Scaled Up



# The Developmental Education Initiative

## Figure 3.3

### Percentage of Students Served Over Time, by Objective of Focal Strategy

#### Acceleration

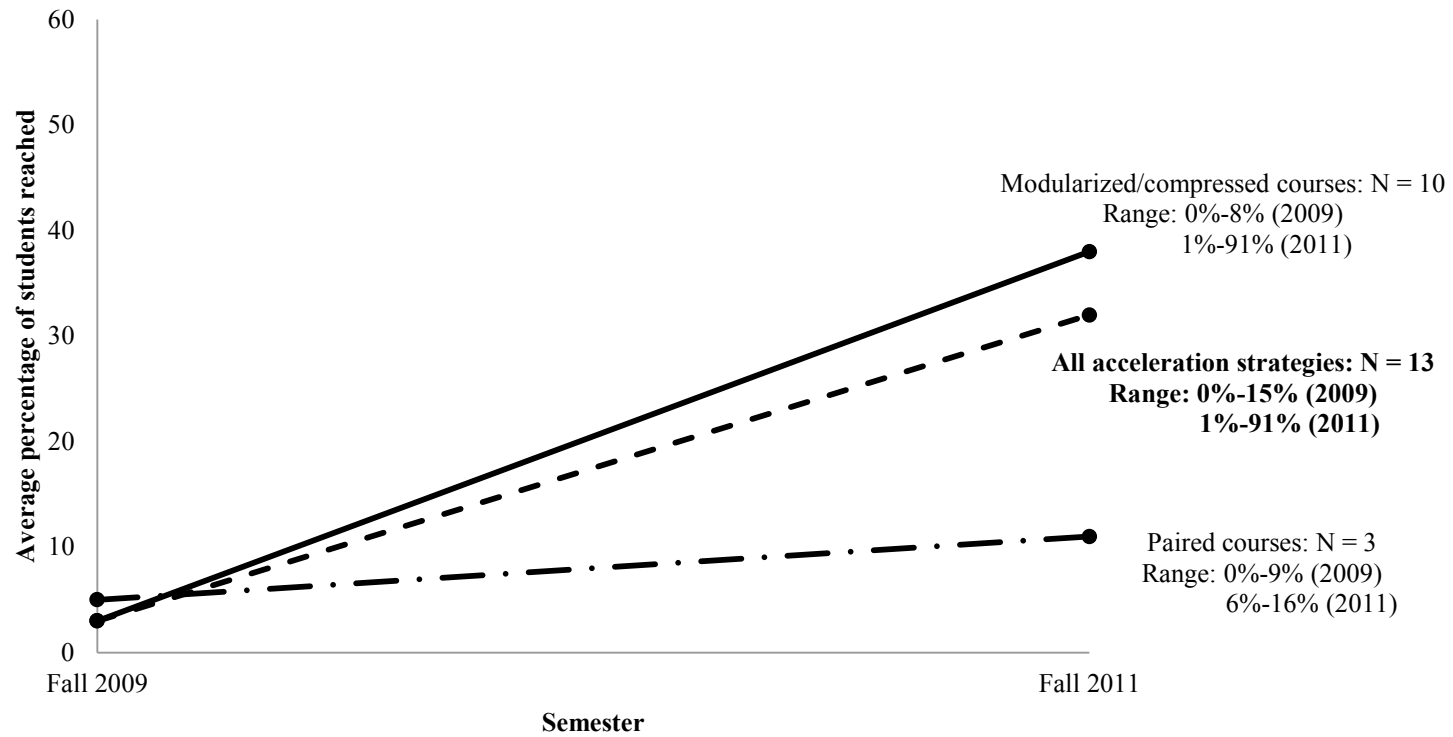
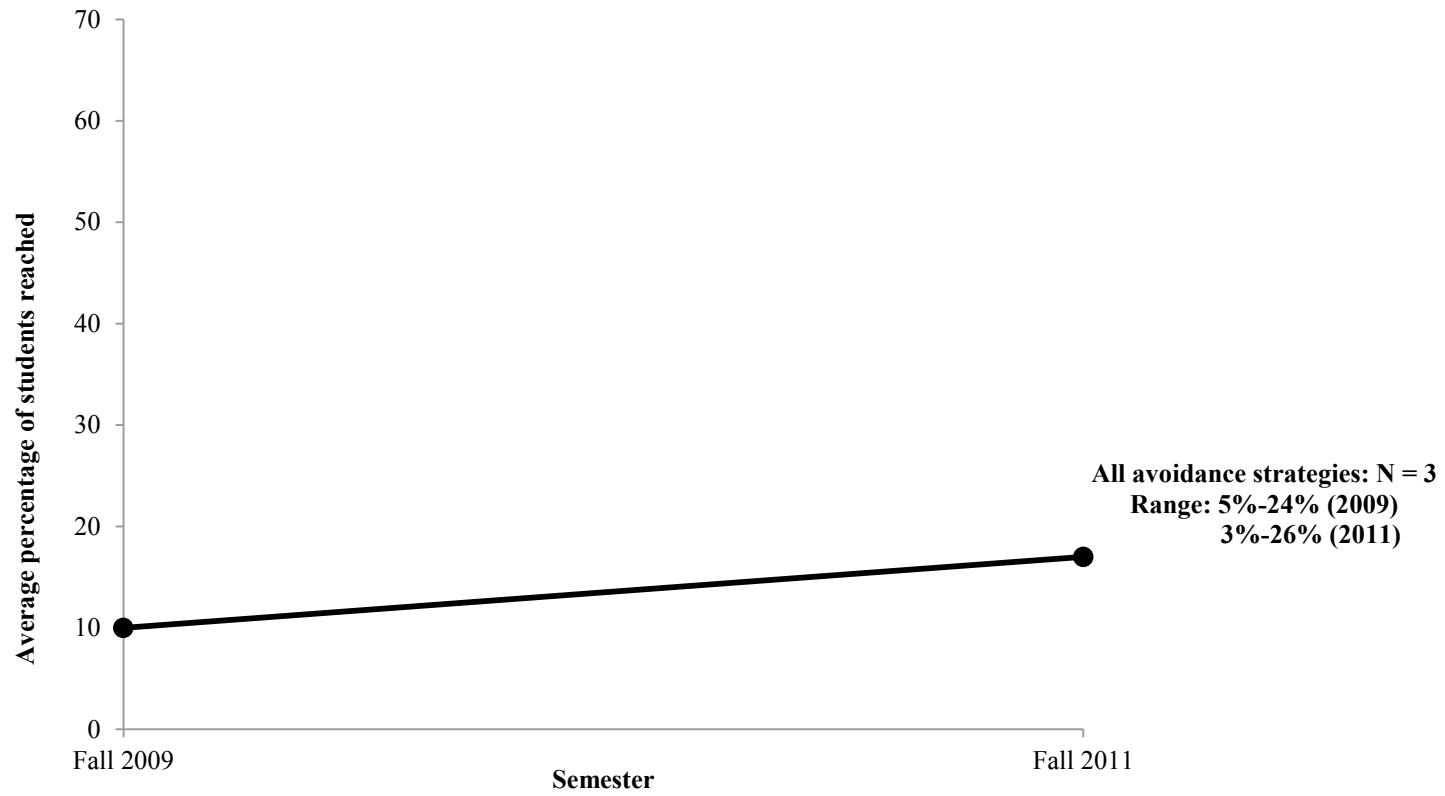


Figure 3.3 (continued)

Avoidance



(continued)

Figure 3.3 (continued)

Support

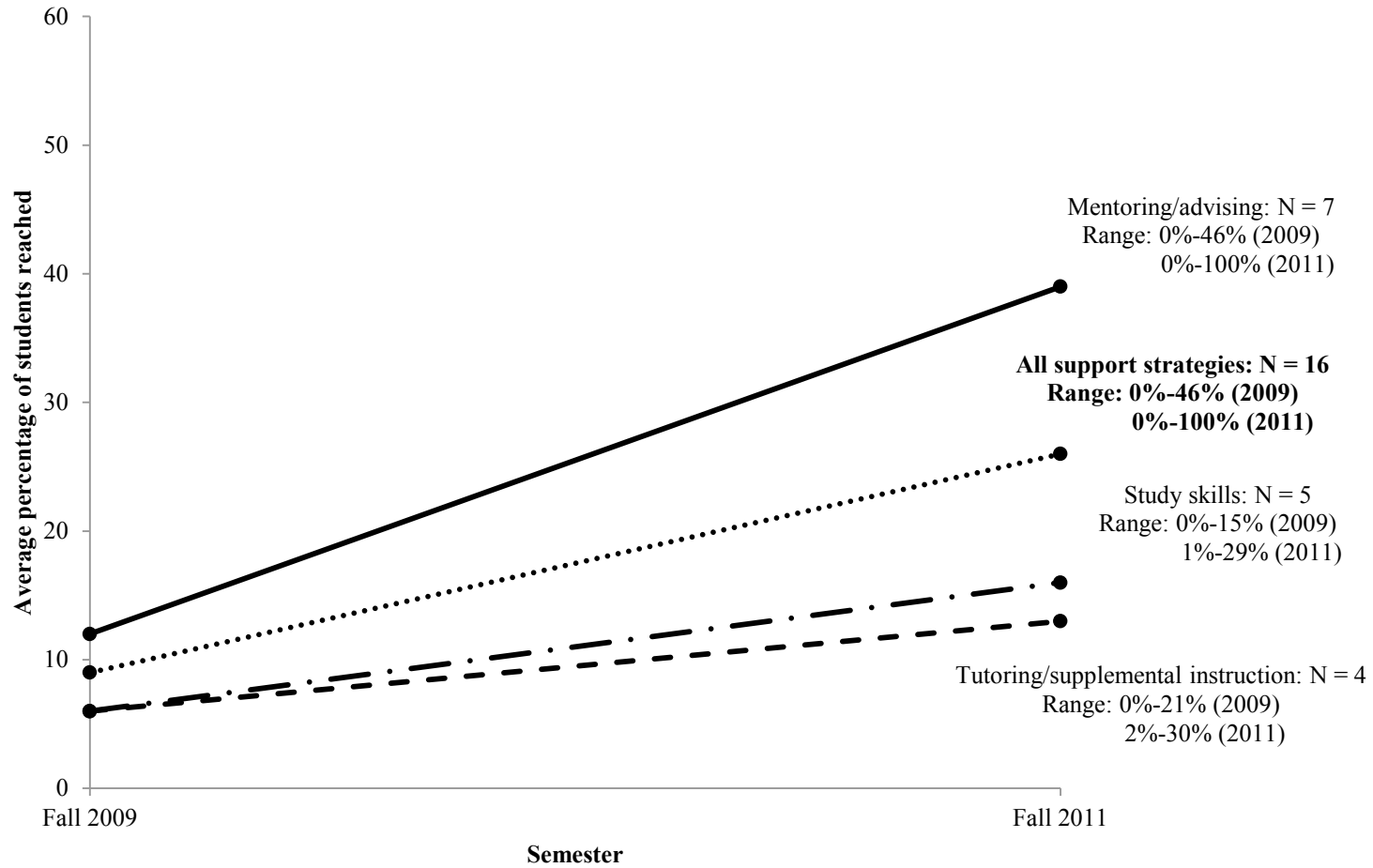
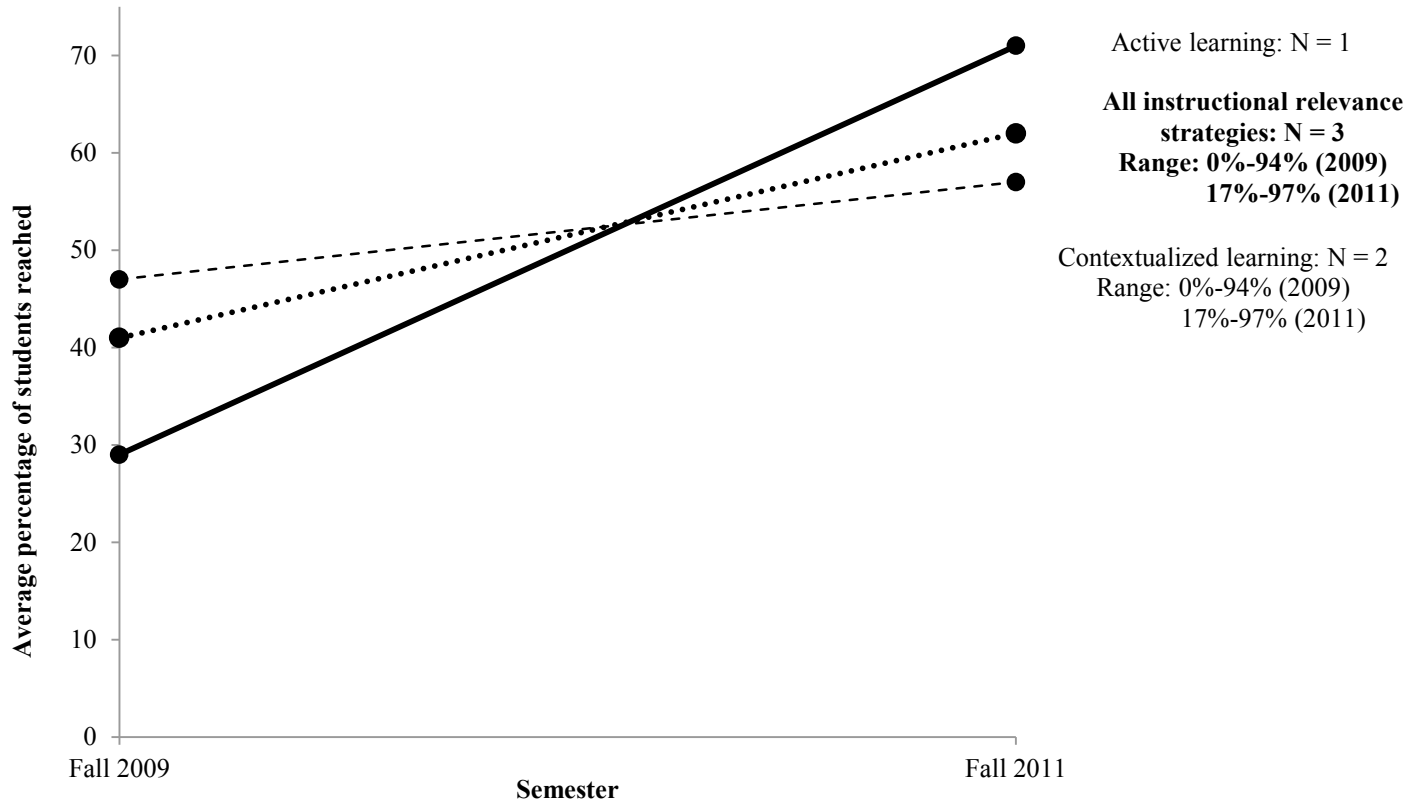


Figure 3.3 (continued)

Instructional relevance



## **Factors Associated with Scale-Up: The Qualitative Point of View**

The remainder of this chapter uses qualitative data from interviews, focus groups, and site reports to examine the factors that have advanced scale-up of the DEI focal strategies. A number of strategies are called out for special attention because they were able to reach very high proportions of their target populations. It is worthwhile asking what made the exceptional degree of scale-up of these strategies possible.

Four elements — resources, communication, engagement, and a commitment to uniform instructional practice — emerge as especially important factors promoting scale-up in the DEI and are discussed below in turn.<sup>7</sup> Factors constraining scale-up are also considered. These include the absence of sufficient resources, communication, and engagement. But, aside from these “negative” explanations, other considerations also limited the degree to which focal strategies were expanded. The qualitative analysis makes it clear that competing values sometimes came into play in influencing decision-making about scaling up — or scaling back.

### **Resource Adequacy**

Staff, space, and technology all fall under the “resource” rubric. Resources affect not only the number of students who can be served but also the depth and intensity of those services. Resources need to be commensurate with stated goals. Otherwise, the scope of these goals is likely to contract to align with the resources that are available.

#### *Staff*

In November 2011, Zane State College served 100 percent of its students eligible for intensive advising. The college had implemented intensive advising for developmental math students under the Achieving the Dream (AtD) initiative. Under the DEI, the college scaled up this strategy to cover all developmental students. What made this possible was the deployment of two case managers (one of whom was funded by the grant) whose work was especially focused on high-risk students and on specific tasks. An important part of the case managers’ work was to identify students who had preregistered for courses for which they had unmet developmental prerequisites and to register them instead in the courses that they were first required to take. Another charge was to identify students who were qualified to enroll in the learning communities and compressed math courses that constituted the college’s acceleration-oriented focal strategies. The case managers contacted and worked with students in an early

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<sup>7</sup>Versions of the first three of these elements are among those identified in a conceptual model known as SCALERS, which seeks to identify the elements that are essential to expanding any initiative. The SCALERS model was developed by Bloom and Chatterji (2009) and was adapted by MDC to make it more relevant to community colleges and to the DEI.

intervention program for students identified as having attendance or performance problems. Finally, the case managers paid special attention to students whose profiles on the Noel-Levitz Retention Management System's College Student Inventory (CSI) identified them as at high risk of dropping out.

During the last year of DEI implementation, Zane State College's ability to provide intensive advising was challenged by turnover in the advising staff and by a sizable influx of new students who required developmental coursework and who were identified as being at high risk. The college responded by hiring three paraprofessional advisers from among the developmental education faculty to continue to provide intensive and personalized counseling to students. In this way, the college was able to reach all eligible students.<sup>8</sup>

South Texas College's record in scaling up its case management component stands in contrast both with Zane's scale-up of intensive advising and with its own more successful implementation of contextualized learning, discussed below. At South Texas, case managers' initial workloads simply proved excessive. At first, the college planned to have four case managers contact new, first-time-in-college developmental reading and English students four times during the first semester and three times during the second semester. The case managers who were hired were judged to be highly skilled and efficient, but their caseloads were too large — case managers at the main campus had caseloads of 600 students each — to allow for the face-to-face interactions with students that were deemed most desirable; instead, a contact was defined as any instance in which the case manager has initiated interaction with the student (whether in person or by phone or e-mail), and gets a response. Faced with financial constraints that precluded the hiring of additional case managers, administrators decided that resources were spread too thin to be effective. They opted to scale *back* rather than *up* by limiting case management to first-time-in-college students who had attended an orientation session.

Cuyahoga Community College's experience with respect to mentoring is somewhat akin to that of South Texas College. Cuyahoga initially planned to recruit faculty members, staff members, and administrators as volunteer mentors and to assign them to students on a one-to-one basis. The number of students requesting mentors far exceeded the number of mentors, however. In response, the college allowed students to serve as mentors, had small groups of mentors work with larger groups of students, and assigned mentors to entire classes. While these stratagems for stretching mentoring resources enabled more students to gain exposure to an individual who could help them resolve problems (or direct them to someone else who could

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<sup>8</sup>While Zane's experience is described here to illustrate the importance of resource adequacy, another factor that undoubtedly played into successful scaling of the strategy was the close working relationship between the director of the DEI and the director of the college's Student Success Center, to whom the advisory staff reported. The two were long-term colleagues, communicated frequently, and held similar views about the strengths and needs of developmental students.



help them), constraints on these resources changed the nature of mentoring, making it a “lighter-touch” component than had originally been intended. Internal college data suggested that the intervention was nonetheless having a positive effect on student retention, and the college is continuing to experiment with various ways of using peer mentors.

### *Technology and Space*

Several of the DEI colleges chose to scale up technology-based instructional strategies. In one case, front-end investment in technology was used to expand the reach of what had been a classroom-based intervention. Guilford Technical Community College created COMPASS Review 2.0, an Internet-based version of a course to prepare students for taking or retaking the COMPASS placement test. The online review featured, in high definition, 33 math, 15 reading, and 15 writing instructional videos. With the support of various college faculty and staff — the developmental education faculty, counselors, assessment center personnel, and institutional research and eLearning staff, among others — the online tool was marketed aggressively to students to increase participation in the review and to attempt to get students to take the placement test more seriously. To reach even more students, the college packaged COMPASS Review 2.0, placed it on an online educational platform, and shared it free of charge with community colleges in North Carolina. By using technology in this way, Guilford Tech was able to make the test preparation strategy almost infinitely scalable both inside and outside the college, at marginal cost.

In other cases, scaling up technology-based strategies required that colleges make available to faculty and students the physical space and equipment necessary to secure access to that technology. To further its goal of integrating technology into all its developmental education courses, Danville Community College not only built a new computer lab for math instruction but also used Title III grant money to purchase two mobile labs to support the use of technology in the classroom. In addition, to foster faculty and student engagement in technology-based instruction, the college revised its course schedule to increase the amount of available lab time. Norwalk Community College used the DEI grant as an opportunity to designate a computer lab for a new one-credit Informational/Technology literacy course that was linked to students’ learning communities and in which students were introduced to electronic portfolios.

To expand its computerized, self-paced instructional model known as Math Emporium at four of its five campuses, El Paso Community College reconfigured, remodeled, or built additions onto existing structures. At the fifth and largest campus, the college chose to build a permanent, freestanding facility to house Math Emporium classrooms. Unexpectedly, progress was stalled by the introduction of a new city ordinance that caused major construction delays and forced the college to incur a significant financial burden in order to meet the city’s new requirement. Committed to the Emporium model for math and other disciplines, the college

continued to move forward with plans to build the facility, despite the added cost. Until the new lab could be completed, the college continued to offer Emporium-style courses using computer carts in temporary classrooms.

Some DEI colleges that chose to scale up technology-based focal strategies did not mandate student use of the technology, as discussed below. Thus, technology was a factor that enabled scale-up, but, absent other conditions, its availability did not ensure that large numbers of students would pursue interventions involving computerized instruction.

### **Communication and Engagement**

As in the 2011 report,<sup>9</sup> Communication and Engagement are discussed together because the concepts are highly interconnected. Communication efforts described here focused on informing campus constituents about the DEI in the hopes of engaging and encouraging them to support or adopt the focal strategies.

Strong and positive communication enables successful scale-up, and college presidents played a critical role in communicating to various constituencies the importance of the DEI in general and of the college's focal strategies in particular. As the initiative progressed, these leaders continued to play an important role in communicating to the college's faculty consistent messages about the institution's ongoing commitment to the DEI. At Danville Community College, during interviews with prospective faculty members, the president promoted the college's participation in the national initiative — partly to demonstrate the college's commitment to its developmental learners and partly to help prospective faculty understand the nature and challenge of the work ahead. In his words, "We tell those prospective faculty: 'This is what we do, this is who we are. We want you to be a part of this. If you don't think you can be a part of this heavy lifting, [this may not be the right place for you].'" This message is also reiterated during the college's faculty/staff orientation. The president also recalled an instance when he had to correct misinformation about the initiative after an administrator told several colleagues that the college would not continue with the DEI. Reflecting on his role as leader, he commented, "I had to publicly state in several arenas that we were not backing off one inch. They needed to hear it from me."

Smooth scale-up of the focal strategies also hinges on the colleges' ability to maintain engagement among stakeholders. When there is a base of support among the faculty and administrators who are charged with scaling up the strategies, the process is easier. According to one DEI coordinator, "[Faculty] have to be involved, and it is better if there is lots of faculty

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<sup>9</sup>Quint et al. (2011).

buy-in.” Similarly, if a strategy requires major changes, such as blocking enrollment or ending the policy of late registration, a high level of administrative support is required.

With this goal in mind, colleges used various methods to engage faculty. Professional development and access to technical assistance — topics considered in Chapter 4 — were among these methods. Other techniques included involving faculty and staff on teams and on committees designed to support scale-up, raise awareness, and advance collaboration. El Paso Community College paired DEI with its collegewide Start Right Initiative, which was led by four work groups composed of faculty, staff, and student representatives, all engaged in efforts to promote student success. El Paso also engaged faculty through a Student Success Core Team, whose efforts to scale up and institutionalize the focal strategies received the attention of key leaders and decision-makers at the college. Cuyahoga Community College created teams of faculty and staff who collaborated on drafting the job description for the supplemental instruction leader positions that the college sought to fill; team members also participated in the interview process.

The scale-up process also benefited in instances where faculty (and other key actors) took ownership of a given strategy. At El Paso Community College, a math professor involved in the scale-up of the Math Emporium strategy created a set of online videos to help other math professors practice teaching in an Emporium-style classroom. Similarly, at Houston Community College, a math professor developed online videos to help students in the Math Bridge course prepare for their final exams. And, at Housatonic Community College, the director of academic support, the lead developmental math professor, and the college’s testing coordinator worked together to develop instructional materials for the college’s placement test preparation strategy.

Proactive efforts to engage faculty could be complicated by a strong faculty union, as was the case at Norwalk Community College. At that institution, incentives persuaded a cadre of dedicated adjuncts and full-time instructors to lead a notable expansion of the college’s learning community strategy.

Some colleges that were not as inclusive in engaging faculty early on — such as in the grant-writing process or in the development of the focal strategies — continued to struggle with securing faculty buy-in and maintaining it. According to one DEI coordinator, when time-limited grants are written without faculty input, scaling up the strategies can be very challenging because time is needed to build support for the work. Absent that strong support, a lot of time can be spent trying to persuade faculty of the strategy’s value. In one case, a DEI college scaled up an instructional strategy that paired a college math course with a student support course. According to the DEI coordinator, the decision to scale up the strategy was taken “on high,” and success depended on how the various deans communicated with faculty about the strategy. In the beginning, a lack of communication with the administration and among faculty at the

college's several campuses led to the course's being offered in inconsistent formats across the campuses. The strategy also met resistance among some faculty members who had not bought into it. As a result, the college chose to slow scale-up until the faculty and administration could agree on the appropriate student population to be targeted for the strategy.

The DEI colleges' outreach also extended to students and external stakeholders. As mentioned in the 2011 report, several colleges launched significant marketing campaigns to promote and engage current and prospective students. At Coastal Bend, DEI was a key topic at convocation. In this same vein, Patrick Henry Community College created an award-winning marketing campaign that included developing a logo to represent the initiative, selecting a theme song and campaign name, and organizing two public events that featured nationally known figures as guest speakers and that received coverage by local and regional print and broadcast media.

Efforts to engage stakeholders were not limited to current college students. Danville Community College used persuasive marketing to high school seniors — and their parents — to get eligible students to take up its test preparation strategy. The messaging emphasized the benefits of test preparation in terms of both saved dollars and saved time. Parents were more responsive than youth, and they were able to encourage their children to participate. In this case, parents were influential actors in the scale-up of the test preparation strategy.

There were also cases where college personnel felt that student marketing fell short and that the implementation of the strategies suffered as a result. As noted above, Houston Community College officials believed that they had had only limited success using robocalls and e-mail notification to market the college's Math Bridge strategy to students. At Sinclair Community College — which scaled up modularized math — advising and online registration issues surfaced when students registered for the modularized classes unaware that the course was self-paced. As a result, the college had to revisit how the course was described to students. Among other things, the college's journalism department put together a glossy publication in which the DEI focal strategies were featured. Journalism students interviewed students participating in the college's DEI interventions, who talked about the benefits of enrolling in the new courses. Thus, a class project for one course became an important recruitment method for other courses.

### **Commitment to Uniform Instructional Practice**

Because teaching and learning are the core activities of community colleges, it is especially relevant to examine the factors contributing to the wholesale expansion of four instruction-related focal strategies. The redesign of developmental math and English at Eastern Gateway Community College and the contextualization of instruction at South Texas College each reached over 85 percent of their target students in fall 2011, and collaborative

learning at Patrick Henry Community College engaged over 70 percent of its target group in the same semester.

Two aspects of the scale-up of these strategies are especially notable. First, in the case of developmental math and English redesign at Eastern Gateway and of contextualization at South Texas, the interventions were planned to reach all students from the outset. Rather than scaling up, these initiatives *began* at scale. The students were already “on board” to take the new courses; no efforts to recruit or engage them were necessary. Faculty members, too, were on hand to teach the courses; only *how* the courses were taught changed, so that implementing the strategies required little in the way of additional staff resources.<sup>10</sup>

Second, at all institutions, the departments involved — and, in the case of Patrick Henry, the institution as a whole — were all committed to having all faculty members teach the courses in a certain way and to having all students taking the courses be exposed to those modes of learning. How, and how easily, this commitment was attained varied considerably, however.

The scaling-up at Eastern Gateway of an individualized, computerized approach to math instruction and at South Texas College of contextualized instruction took place through a process that might be termed “gentle fiat”: Administrators — sometimes in conjunction with faculty, sometimes not — make a decision that all classes will be taught in a certain way, and faculty members are informed as to how they are expected to teach. While instructors may have input into the new approaches and may receive professional development related to implementing them — this is what makes the fiat “gentle” — they are not free to deviate from them.

At Eastern Gateway, administrators were dissatisfied with the low success rates of developmental courses and were determined to do something different. Early in the demonstration, a top official commented that while faculty members were concerned about student attendance and performance, they tended to see the problem as one of student motivation and preparation rather than their own instruction; in her view, they needed to alter their teaching practices, which focused on lecturing, to better meet students’ needs. The first year of the grant was a preparatory one. A team of outside consultants advised the developmental math instructors to replace lectures with a math “lab” approach, in which students work independently on the computer and teaching staff are on hand to provide additional explanations when students cannot figure out the material on their own. Eastern Gateway faculty members were given a choice about which computerized product to use, and they elected to make MyMathLab — a computerized instructional product developed by Pearson Education, Inc. — the centerpiece of

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<sup>10</sup>In contrast, scaling up support strategies like case management may require new resources rather than the redeployment of resources that are already available.

the new instruction, since the program had already been used in the practice component of their lecture courses; instructors also received training on the use of MyMathLab.

Initially, the change encountered resistance on the part of some faculty members, who were unwilling to give up lecturing as a teaching modality (and who, according to some of their colleagues, were not entirely computer-literate themselves). A compromise was reached: Faculty were permitted to deliver a 10-minute “mini-lecture” at the start of class. Nonetheless, the launch of the reform in fall 2010 was a rocky one, and many implementation problems were reported; the second year of implementation went far more smoothly.

Despite all these issues, and in the face of turnover in project leaders, Eastern Gateway was consistently able to serve a majority of the students targeted for the developmental math focal strategy. The course redesign’s scale-up was also supported by the college’s decision to institute a policy mandate prohibiting students from enrolling in college-level courses until all developmental education requirements had been completed. The mandate guaranteed that all developmental learners would have to enroll in developmental education courses first and that, once enrolled, students would automatically be served by the new computerized instructional format.

Contextualization of developmental reading and English at South Texas College had a much smoother reception. For one thing, the approach, while mandated by the administration, arose from the faculty. Faculty members in the two departments had been appointed to a committee that was charged with identifying workable strategies for the DEI grant application, and, after conducting research on best practices in the fields of developmental reading and writing, they arrived at the idea of curriculum contextualization. For another thing, the concept of incorporating topics related to history (a subject that students were required to take) and to sociology (a subject that many students took anyway) into reading and writing assignments struck a resonant chord with faculty members and did not represent a marked deviation from past practice. The textbook used in developmental reading classes, for example, included selections related to these subjects as well as to anthropology, psychology, and science; the developmental English department, in particular, had a history of making changes to the curriculum, so that its members took another set of changes in stride.

A small faculty committee began planning for the new curricula during the summer of 2009, when many faculty members were away. There was some irritation on the part of instructors when they returned in the fall to find a *fait accompli*. They offered no strong resistance to implementing the new contextualized units, however, and, over time, both reading and writing instructors came to feel that the contextualized assignments were helping students to succeed in their college-level coursework.

The plan was for one of the five major assignments in each writing course (four major assignments in the course for the lowest-level students) to involve a contextualized topic in Year 1 and to add a second such assignment in Year 2 and a third in Year 3. Thus, during the first year, students in the lowest-level developmental English course wrote an essay on the benefits of a college education; midlevel students wrote about gender roles in society; and the highest-level students wrote about multicultural education. Upon reassessment, faculty members decided to limit the number of contextualized assignments to just two in the DEI's third and final year. For one thing, in a data-oriented institution, data from the third year would be collected too late to inform future decision-making. Perhaps more important, instructors discovered that the contextualized writing prompts required more time and effort of students, who had to weave together information from a variety of sources as they wrote their essays. Adding a third contextualized assignment while keeping students' workloads manageable would have required that instructors reduce further either the length or the total number of essays that students were to write; instructors were willing to do neither. Instead, faculty cut one major essay from each course's requirements, substituting shorter writing tasks. In a sense, then, resource constraints, in the form of available time, affected the depth of contextualization, although not the number of students affected by the strategy.

If the commitment to computerized and individualized math instruction at Eastern Gateway came from the top down, the decision to adopt the same approach for developmental English at the college came from the bottom up. The DEI project director urged members of the English department to develop their own reform strategy, telling them that this might be the last and best opportunity to do so that they might have for some time — and especially before the State of Ohio, which was in the process of reexamining all aspects of higher education, might lay down some mandates that Eastern Gateway faculty might dislike. The faculty elected to teach writing using a computerized approach, using another Pearson product, MyWritingLab.

Finally, the impressive expansion of collaborative learning at Patrick Henry Community College (from 29 percent of the target population reached in fall 2009 to 71 percent reached in fall 2011) reflected an institutionwide commitment to this mode of instruction, with which it had begun to experiment in 2003 as an early Achieving the Dream college. By the time the college was awarded a DEI grant, more than half of all faculty members and 100 percent of developmental education faculty members had completed extensive training and had adopted cooperative learning strategies for use in their classrooms. The principle of using active cooperative learning to enhance student engagement inside the classroom had been embraced throughout the college. In addition, the college had emerged as a national leader in active cooperative learning for community colleges and was in the process of founding its own institute to offer public schools and postsecondary institutions leadership and training in this area. In essence, collaborative learning put Patrick Henry on the map.

## **Student Choice in How to Learn**

While approaches that entail a uniform approach to teaching and learning may promote maximum scale-up, they do not accommodate student choices or preferences about what or how they learn. In contrast to Eastern Gateway, where all developmental classes are taught in a computerized and individualized format, other colleges — including those with well-equipped math computer labs — did not push “one size fits all” policies and practices.

Sinclair Community College took a measured approach to expanding its modularized math courses. Students facing developmental math requirements either could select a lab setting in which they were expected to work independently on computers, with tutors available to provide help when necessary, or could enroll in a traditional math class taught largely through lectures. Staff members strongly supported giving students such choice: Instructors maintained that independent learning worked for some students — particularly those who were computer-savvy and motivated to do more in a given time period — whereas the traditional lecture approach worked best for others, including those who were not easily engaged by self-paced learning. While instructors and advisers encouraged students to consider the modularized approach, they also firmly believed that students should have a voice in selecting the instructional modality best suited to their particular learning style.

Similarly, Norwalk Community College strongly encouraged but did not mandate first-time students who placed into developmental English to enroll in learning communities. The college conducted small-group orientation sessions at which students heard about the value of learning communities and could, if they chose, register in one.

## **Other Student Needs**

While many college students take into account *when* classes meet in choosing their courses, time is an especially precious commodity for community college students, who often must balance studies with jobs and family commitments. Back-to-back class periods (an integral part of some acceleration strategies that involve students enrolling in a college-level course immediately preceded or followed by a class focused on skills-building) or course schedules that left large gaps during the day did not work for many students. Scheduling posed special problems in smaller colleges and colleges in more rural areas (often the same institutions), where many students had to travel long distances to attend school — sometimes in old, unreliable vehicles, according to one DEI coordinator. Especially when a small college’s instructional strategy was intentionally targeted to a specific population — such as students whose placement test scores placed them in the upper ranks of developmental education enrollees — the relatively small number of such students meant that only a few sections of the course could be offered, further complicating scheduling considerations and limiting scale-up.



Furthermore, economic priorities could trump educational aspirations. When, for example, there was a surge in demand for workers in the natural gas industry, overall enrollment at Coastal Bend College dropped, precluding further scaling of a focal strategy aimed at helping upper-level developmental students advance quickly and successfully to college-level English. The experience of Coastal Bend and other institutions suggests that the more constrained the target group that an intervention seeks to serve, the more that scaling up may be affected by forces that are largely beyond the college's control.

### **Rethinking Ineffective Strategies**

While Guilford Technical Community College, as noted above, experienced considerable success in expanding its technology-based test preparation strategy, its record with respect to another focal strategy, intensive advocacy, was one of trial and error. In a continuing effort to make its advocacy component more effective, the college actually cut back on the scale at which the component operated.

During the first year of the grant, all students who were required to take two or more developmental courses were assigned advocates, but many did not respond when the advocates attempted to contact them. The next year, administrators decided to direct advocacy to students in a study skills class. Embedded in the course curriculum was a series of assignments that called for students to contact their advocates (for example, an assignment to conduct and write up an interview with the advocate). The college discovered, however, that students were short-circuiting these requirements by having one student conduct the interview and then share the information with others.

Eventually, administrators concluded that students would contact their advocates only when facing a crisis. This led them to designate yet another target population for their advocacy efforts: students whose poor academic records (a grade point average of less than 2.0 and completion of less than two-thirds of the courses they had attempted) placed them at risk of losing financial aid. Within this group, they opted to focus efforts on students who were required to take two or more developmental courses and who, with more support, could raise their academic standing enough to avoid losing financial assistance. By the end of the third year, officials believed that the advocacy component, while serving fewer students than originally planned, would be more successful than in the past.

### **The Limits of Scaling and the Need for Evaluation**

Added to these considerations is the fact that, as early Achieving the Dream colleges, the DEI institutions took data seriously. Some colleges intentionally opted for slower scale-up so that they could build up their data collection infrastructure, get preliminary feedback, and adjust their strategies as necessary. Colleges with weaker institutional research systems were

particularly concerned about setting up the necessary processes for data collection before forging ahead with the interventions.

The call for additional research also reflected the recognition that scaled-up interventions might prove less effective than the pilot programs that preceded the scaling efforts. When asked about the most important lessons about scaling up interventions that he had learned through DEI participation, one college president commented:

Everybody talks about the challenges with scaling. But the other challenge is getting false readings on our initiatives. We see many false positives — you do this pilot project, and success rates are so much better, and then it doesn't happen at the larger scale.

His counterpart at another institution voiced a similar view:

When you get to scale, people tend to lose the discipline of data. It's even more important to hold them to standards when you get to scale than when you're going to scale.

Some colleges understood that rapid scale-up might foreclose opportunities for careful evaluation. Patrick Henry Community College focused its efforts on making active and cooperative learning a central feature of its developmental education program. While the first few courses to introduce this approach could be easily compared with those that did not, the contrast became less clear as active learning techniques spread throughout the institution. Similarly, the DEI coordinator at Coastal Bend Community College expressed regret that the case management strategy had gone to full scale at the start of the DEI. She wished that the college had instead implemented a round of baseline data collection or phased the program in semester by semester so that there would be a basis for comparing outcomes.

These examples suggest that a number of the colleges did not automatically see engaging all students in a focal strategy's target group as the ultimate good. Instead, administrators wanted to be sure that strategies that produced promising results when implemented on a small scale would produce equally good or even better results when expanded to reach more students.

## Chapter 4

# Beyond Scaling: The DEI's Larger Meaning

So far, this report has centered on the extent of scale-up of the interventions that the Developmental Education Initiative (DEI) colleges defined as their focal strategies.<sup>1</sup> But an evaluation that is centered exclusively on the expansion of the focal strategies is overly narrow, for a number of reasons. First, as discussed in Chapter 3, some of the college administrators came to believe that serving all the students in their target populations was not feasible — and, in some cases, not desirable. Second, focal strategies that involve policy changes are not well suited to demonstrating gradual scaling, since they are generally meant to affect all students (or all students within a designated subgroup) all at once. Third, the colleges implemented or scaled up additional policies and interventions for students and also directed a good deal of professional development toward faculty and staff. Finally, for at least one college, the DEI was the impetus for a broader change in campus culture.

In short, the whole of DEI is more than the sum of its measured focal strategies. This chapter considers that whole, examining what the DEI has meant for the colleges, beyond the expansion of discrete interventions.

### Key Findings

- The DEI colleges put in place a number of new policies (some counting as focal strategies, others not) aimed at helping students accelerate through and otherwise succeed in their developmental courses.
- DEI funding also supported programmatic interventions and reforms beyond those included in their focal strategies.
- The colleges have used their DEI grants to support on-campus professional development on a broad range of topics related to developmental education, including the use of new instructional modalities, the characteristics and needs of low-income students, and how instructors can help students better meet those needs.

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<sup>1</sup>Tables 2.1a and 2.1b in Chapter 2 identify the DEI colleges, and Table 2.2 presents their focal strategies. Chapter 3 discusses the extent of scaling up of the focal strategies at the colleges.

- College personnel also learned from each other and from their counterparts at non-DEI colleges at conferences and meetings whose attendance was made possible by DEI funding.
- At some colleges, the DEI stimulated wider discussions about student success and campus priorities.

## **Policy Initiatives and Scaling**

At the outset of the DEI, colleges were advised that the interventions that they designated as their focal strategies should be ones whose scale-up over time could readily be measured. Policy changes do not fit neatly into this category, since, once put in place, they generally affect all students who are subject to them.

Some colleges elected to list policy changes among their focal strategies, but they did not consistently submit data on the numbers of students affected by these policies. At Coastal Bend College and Eastern Gateway Community College, students were required to remain continuously enrolled in and complete their developmental coursework before moving on to college-level classes. North Central State College revised its policies and procedures related to assessment and placement. It instituted counseling for students about the importance of taking the initial placement tests seriously. It also allowed some students who, on the basis of their test scores, would previously have been placed in developmental English classes to enroll instead in college-level courses that had additional instructor-led sessions in which the students could strengthen their writing skills. Danville Community College banned late registration for developmental students, since evidence suggested that students who started their courses late had difficulty catching up with their peers. (The college's newly modularized math classes meant that students who were blocked from registering could enroll in a math module within just a few weeks, rather than having to wait months for the new semester to begin.) In sum, these policy changes, while not well captured by the scaling numbers in Chapter 3, nonetheless shaped the environment in which students enrolled in and attended college and may thereby have affected student success.<sup>2</sup>

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<sup>2</sup>It is also possible that some of these policy changes have had unanticipated negative consequences. For example, a blanket requirement that students complete all developmental coursework before taking any college-level courses might be expected to lead to discouragement and dropping out or "stopping out." The data to investigate this possibility are not available.

## **Additional Policies and Programs**

While colleges were asked to identify and center their efforts on the focal strategies, their programmatic and policy initiatives under the DEI went beyond these strategies.

Valencia College offers perhaps the most striking example of this. While Valencia listed learning communities and supplemental instruction as two of its three focal strategies and reported on the extent to which participation in these activities increased during the DEI grant period, it did not use DEI funding to support these interventions. Rather, the college had instituted these programs under Achieving the Dream (AtD) and had committed to using college funds to institutionalize them upon the expiration of that grant.

Valencia did use part of its DEI funding to strengthen the third focal strategy: the Bridges Program to assist low-income, first-generation high school seniors in making the transition to college. The Bridges manager noted that being part of the DEI had given his program heightened visibility, while another high-level administrator commented, “In any institution this large, to fight for resources, attention, time, just to get a request for programming (which may be #479 on someone’s list) — those are not small hurdles. I have no question that DEI paved the bridge for [clearing] those hurdles.”

Most of Valencia’s funding, however, was used to support other initiatives that were not counted as focal strategies. These included the creation of the REACH program (a special intervention for students who were required to take developmental courses in all three areas — reading, writing, and math) and, as discussed in the next section, the implementation of a new and ambitious professional development system for faculty.

As the DEI demonstration moved forward, colleges continued to develop new policies designed to speed the progress of developmental students. Coastal Bend, for example, reduced the number of courses in its developmental math sequence from three to two, so that students could move through the required math coursework more quickly, and South Texas College also piloted and then implemented a two-course sequence, first in math and then in reading and writing as well. Beginning in spring 2013, developmental math at Eastern Gateway, which is already heavily computerized and individualized, will also be modularized, so that a student need take only those modules required for his or her particular course of study. At Guilford Technical Community College, where grant funding underwrote the development of online and in-person placement test review courses, the college was able to institute a new policy requiring all students who wanted to retake the COMPASS first to enroll in the review course.

South Texas College adopted another policy change designed to promote acceleration through developmental education. While all developmental students had previously been permitted to pay for and take the Accuplacer test at any time during the semester, with the

possibility of exiting the course before the end of the term with a passing grade, few had taken advantage of this opportunity. For the 2011-2012 academic year, all developmental English students were required to take a free Accuplacer writing test after they had completed approximately 90 percent of the course in which they were enrolled; their grade on the Accuplacer counted as part of their course grade. This resulted in a sizable number of students being able to bypass some of the courses in their prescribed developmental English sequence.

The DEI supported programmatic efforts beyond the focal strategies at other colleges as well. El Paso Community College put in place an Early Alert system — an intervention that entailed training faculty and securing their full commitment as well as having a system for the timely collection and reporting of data. At Danville Community College, the DEI grant not only supported the development of modularized math courses but also paid for two tutors who staffed the lab at all times. Cuyahoga Community College undertook a new initiative to emphasize cooperative learning in the classroom. DEI funds were used to equip classrooms with movable desks and multiple whiteboards and easels that would facilitate a new emphasis on cooperative learning.

In Connecticut, both Housatonic Community College and Norwalk Community College undertook reforms in their developmental math programs. Housatonic instituted the iMath program — a computer-based skills refresher program that students may take if placed into a developmental math course. Once students complete the program, they may retake the placement test. In the three years that the college has been operating the program, 75 percent of iMath participants retaking the test have either moved into a higher developmental class or placed out of developmental math entirely. The success of iMath has led the college to pilot an iEnglish program, with promising early results.

Norwalk faculty members worked to better align the courses in the college's developmental math sequence and took other measures to improve student performance. After analyzing the data to determine which students were succeeding and which were having difficulty, they decided to move the highest-level developmental math course into the math department and to teach that course in sequence with the gatekeeper math course, using the same text and assessment practices, among other things. Developmental math faculty also agreed to adopt a common curriculum across the courses they taught. And because the data indicated that course repeaters were also likely to do poorly the second time around, the college identified a faculty member to work both with other faculty members and with students on strategies to improve success.

At El Paso, math faculty members also examined test scores — in this case, scores on the gatekeeper math test scores that former Emporium students had taken. This led faculty members to realize that some students, because of their course of study, did not have to take the gatekeeper math course at all. This recognition has led to regular meetings between math staff

and to better advising, and students are now in a better position to take courses that help them advance rapidly toward a credential — and avoid courses that make for unnecessary delays.

## **Professional Development Opportunities**

The DEI has presented new opportunities for staff professional development. To better implement their focal strategies, as well as to obtain more general feedback, the colleges made use of technical assistance provided to them under the DEI grant, drawing on the services of consultants whose efforts were coordinated by the Community College Leadership Program at the University of Texas at Austin. Thus, for example, two experts on contextualized learning conducted workshops for faculty members at South Texas College to help them implement contextualized curricula in developmental reading and English courses. One of these consultants similarly helped Zane’s faculty members who were involved in learning communities that paired developmental and college-level level courses to recognize the importance of integrating the curricula of the two classes. Likewise, Norwalk Community College drew on the expertise of a consultant to promote faculty members’ use of integrative learning strategies in learning communities that linked developmental and student success courses with a newly created Information/Technological Literacy course.

Colleges also used DEI resources to purchase professional development from other sources and for other DEI-related purposes. Cuyahoga Community College brought trainers from the University of Missouri at Kansas City to Cleveland so that instructors could learn about the supplemental instruction program that the university had developed. Zane State College invited to the campus a consultant who led what was generally considered a provocative and thoughtful workshop on teaching students in poverty. The consultant emphasized the importance of personal relationships to such students; because, in her view, low-income students have underdeveloped long-term planning skills, she suggested teaching strategies like breaking up an assignment into smaller segments, each with its own goal and deadlines. Zane also operated a series of weeklong summer workshops on using technology to promote classroom engagement; faculty members, who received a stipend for attending, listened to colleagues with expertise in this area and also had the opportunity to plan for using technology in their own classes. Housatonic Community College held an on-campus two-day faculty training session focused on student engagement, which was so well received and was reported to be so beneficial in the classroom that subsequent two- and three-day sessions were held to expand the training and enhance the lessons learned. North Central State College procured technical assistance to train faculty and staff in developing logic models for use in the planning, implementation, communication, and especially evaluation of key initiatives. Additional training at the college focused on enhancing faculty and staff capacity so that all the college’s programs and initiatives, including those in the larger strategic plan, could be consistently evaluated.

At Valencia College, DEI funding has supported a professional development effort aimed at the entire developmental education faculty. The initiative involves training faculty on the college's developmental advising model, known as LifeMap, which sets out the stages through which students are expected to progress to achieve success. The goal is for faculty members to incorporate the success principles spelled out in LifeMap into their teaching, so that all developmental courses (not just specially designated Student Success courses) will help students acquire the academic and personal skills (note-taking, time management, and so on) that they will need throughout their college careers. Materials related to these concepts are being organized into a coherent program that will be available online, so that adjuncts as well as full-time staff will be readily able to participate.

DEI funding also enabled participating colleges to learn from one another, as well as from colleges outside the DEI network. Thus, Guilford Tech adopted student tracking software that had been developed at Sinclair Community College. The grant also made funding available for site visits and for conference attendance. Faculty at Norwalk Community College, as well as a large contingent of faculty from other schools in the Connecticut system, attended a full-day workshop on reflective practice; the workshop emphasized critical thinking and integrative learning in learning communities and through electronic portfolios. Staff from Cuyahoga, North Central State, Sinclair, and Patrick Henry attended a conference in Baltimore on the Accelerated Learning Program (ALP) developed by the Community College of Baltimore County and went home determined to implement it on their own campuses. The DEI program director at Cuyahoga met with Eastern Gateway personnel on three occasions to help them with the redesign of their developmental English program. And Zane State College hosted a daylong Ohio Community College Math Summit in which 22 of the state's 23 community colleges participated. The meeting stimulated a good deal of discussion; breakout sessions were led primarily by faculty from the DEI colleges, who shared their innovative developmental math strategies and outcome data with personnel from non-DEI and AtD institutions.

Furthermore, at meetings convened by MDC and the Community College Leadership Program at the University of Texas, DEI program directors and other staff members at the 15 colleges had opportunities to interact and to share their experiences with one another.

## **Broader Campus Change**

Participation in the DEI brought new prominence to developmental education. A change in the organizational structure at Zane State College gave official recognition to the importance of the Developmental Education department. The department, which had previously been an academic support department with professional staff employees, was made a department within the Division of Arts and Sciences, and four full-time developmental education faculty positions were created. College administrators reported that integrating the department into



the academic division increased the credibility of the developmental education program, enhanced the role and title of the developmental education director (who was named an associate dean), and enabled the developmental instructors to become more fully engaged in the college's academic processes.

At Cuyahoga Community College, the DEI led to the institution of the Developmental Education Council, a large policymaking body that includes administrators, faculty, and staff. The group's deliberations led to the implementation of a policy banning late course registration and a new test preparation intervention.

The DEI prompted new thinking about developmental education. At Guilford Tech, for example, administrators who were interviewed in the third year of the grant were asking new questions about placement tests and about the very need for developmental education (at least for some students). As one commented, "We've learned through research that we are doing ourselves and our students a disservice by having everything hinge on a single placement test score. . . . We've even thought and talked about: If there are segments of students who are sort of borderline, why not let them go ahead and try [college-level courses], then remediate if it doesn't work out?"

The DEI director at Valencia spoke for many of his counterparts elsewhere in asserting that, in part because of the college's participation in AtD and the DEI, a new recognition of the importance of ensuring college readiness and college success (not just access) has developed on campus. Faculty and staff, he noted, now see helping students develop success skills — once thought of as the province of the college's student success course — as a responsibility that all share.

Finally, at some institutions, the DEI was the impetus for a larger change in campus priorities. North Central State College provides a case in point. For this small college with limited institutional research (IR) capacity at the start of the grant, scaling up strategies while setting up the infrastructure to measure them was particularly challenging. A college administrator advised that any small college embarking on an initiative like the DEI make sure that its information technology (IT) capacity be in place first, noting:

It's been a challenge for us. We're a small institution, and here's the advice I'd give to another small institution: Assess your IT and IR capacity. Use a logic model or similar tool to determine what you measure and why before you develop the strategy.

On the other hand, she asserted that the dual challenges of reforming developmental education and developing strong data systems created institutionwide momentum and mobilized faculty and staff in pursuit of both goals:

The focus on our IR capacity and our IT capacity became priorities for the college and opportunities to bring together people who we needed to bring to the table. DEI changed us forever.

## Chapter 5

# The DEI and Student Outcomes

The preceding two chapters deal with the implementation of the Developmental Education Initiative (DEI); this chapter, in contrast, discusses the initiative's outcomes. The data on student outcomes that the colleges submitted to JBL Associates provide preliminary and suggestive findings about the specific focal strategies that the colleges implemented and about whether the DEI as a whole made a difference for student success.<sup>1</sup> This chapter presents these findings and relates them to the existing literature about what works to improve the trajectories of developmental students.

An important caution is in order, however: The findings cannot be taken as conclusive evidence about the impacts of the DEI on student outcomes. A rigorous impact study using random assignment or a strong alternative research design was not part of the charge to the DEI evaluators. Therefore, the methods available to the evaluators can show that the DEI was *associated* with the outcomes that were observed, but they cannot prove that the DEI *caused* these outcomes.

The data are analyzed in two ways. First, outcomes for students who participated in the individual focal strategies are compared with outcomes for nonparticipants. Second, outcomes for cohorts of students who enrolled in the institutions after the DEI was put in place are compared with outcomes for earlier cohorts.

### Key Findings

- When outcomes for participants in the focal strategies were compared with outcomes for nonparticipants, the majority of outcome differences (61 percent) were not statistically significant. Of those outcome differences that were statistically significant, a far higher percentage were positive than negative (35 percent and 4 percent, respectively), suggesting that participation in the focal strategies benefited students rather than harmed them.
- The DEI strategies were especially likely to be associated with increases in credits earned during the first term and with greater success in passing the gatekeeper English course by the end of the second term.

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<sup>1</sup>Chapter 2 describes the participating colleges (Tables 2.1a and 2.1b) and the focal strategies that each college adopted (Table 2.2).

- Strategies that involved contextualized instruction and collaborative learning were especially likely to be associated with positive outcome differences.
- On the whole, students who enrolled in the colleges after the inception of the DEI (whether or not they participated in any of the focal strategies) achieved outcomes that are either better or no worse than outcomes of students who enrolled in the colleges earlier.
- In general, strategies that reached more than 50 percent of the students whom they aimed to serve were more likely to be associated with positive outcomes than strategies that reached smaller numbers of students.

## **Outcomes Associated with Participation in the Focal Strategies**

The first set of analyses examines the outcomes associated with each of 31 focal strategies.<sup>2</sup> It examines students who were identified by the college as being in the target group for the strategy during their first term and compares outcomes for students who participated in the intervention during that term with outcomes for students in the target group who did not participate.

Differences in outcomes between those two groups may be attributable to the intervention itself, but they could also be driven by preexisting differences between the two groups. Consider the case of a self-paced, computerized math course. Although the target group might include all students, such a course might well be more attractive to younger students, who are arguably more at ease with computers than their older counterparts; the latter might prefer more traditional instructional modalities. But younger students in the computerized classes, having attended high school more recently, may also remember the contents of their high school math courses much better than older students in traditional classes. If computerized classes have better outcomes than traditional classes, it would be inappropriate to conclude that these outcomes are due to the self-paced, technology-oriented nature of the courses, since the two kinds of classes serve different groups of students with different levels of skills at entry. The analyses employ regression adjustment to attempt to control for such initial differences using available data on measured student characteristics.<sup>3</sup> The simplicity of this approach makes it

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<sup>2</sup>The strategies included are those for which data are available and for which there are sufficient numbers of students in both the treatment and the comparison group to allow a reliable estimate of differences between the groups. For more information, see Appendix A: Technical Appendix.

<sup>3</sup>The regression analysis controls for term of entry (combining the winter and spring terms into a single “spring” term for the three colleges on the quarter system), gender, age (whether the student was 25 or older or younger than 25), minority status, the level of each developmental class (if any) to which the student was referred in all three developmental subjects (math, reading, and writing), and whether the student was participating in another focal strategy in that first term.

possible to apply a consistent analytic method across the many different types, time frames, and target populations of the focal strategies.

The approach has decided limitations, however: Unmeasured characteristics between the groups cannot be controlled for, and these could have an important influence on program outcomes — potentially, at least as important or more important than the variables that can be measured and controlled for. As an example, consider a situation in which counselors encourage highly motivated students to take an accelerated course while encouraging less motivated students to take the normal developmental sequence. Because motivation is unmeasured in this study (as in most studies), it cannot be included as a control variable in the analysis; as a result, the more motivated students participating in the accelerated course are likely to have stronger outcomes, regardless of whether the intervention itself is effective. As noted above, a random assignment design, which is the only way to control fully for unmeasured variables, was not planned for this study.

A further complication is that the accuracy and reliability of each estimate is dependent on the definition of the treatment and comparison groups created by each college. For these reasons, the results discussed here should not be interpreted as representative of true intervention impacts.

The analyses examine five key variables:

- Credits earned in the first term (including credits for all courses, whether developmental or college-level, that were passed with a grade of D or better)
- Grade point average (GPA) in the first term (including credits earned at a college from which the student transferred, if applicable)
- Persistence (that is, whether the student returned to college) at the beginning of the second term<sup>4</sup>
- Whether students passed the “gatekeeper” course in English (that is, the first college-level English course required for completion of a degree) by the end of the second term<sup>5</sup>

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<sup>4</sup>For cohorts that entered in the fall, second-term outcomes include outcomes registered that fall or in the next winter-spring term; for cohorts that entered in the winter or spring, second-term outcomes include those registered during that term and in the following fall term.

<sup>5</sup>Outcomes for passing gatekeeper courses are calculated as unconditional outcomes; that is, if a student has not enrolled in the gatekeeper course or has enrolled but failed to pass the course, the student is counted as having “not yet passed” the course.

- Whether students passed the gatekeeper course in math (the first college-level math course required for completion of a degree) by the end of the second term<sup>6</sup>

Of the 31 strategies, all had sufficient follow-up data to examine first-term outcomes (credits and GPA) but not necessarily second-term outcomes.<sup>7</sup> Moreover, English and math gatekeeper outcomes were calculated only for strategies for which these outcomes were relevant. (For example, math outcomes were not calculated for English-oriented strategies.) Thus, the number of strategies for which second-term outcomes are measured is less than the number of strategies for first-term outcomes.

### **Overall Findings**

Table 5.1 shows the percentage of focal strategies for which outcome differences between participants and nonparticipants are significantly positive (that is, participants had better outcomes than nonparticipants), significantly negative (participants had worse outcomes than nonparticipants), or neutral (participants' outcomes do not differ significantly from outcomes of nonparticipants).<sup>8</sup>

The most important finding appears in the last row of the table. The data indicate that while the majority of strategies (59 percent) show neither positive nor negative outcome differences, of the remaining strategies, far more appear to be associated with positive than with negative outcome differences (36 percent and 5 percent, respectively). The DEI strategies were especially likely to be associated with increases in credits earned during the first term and with greater success in passing the gatekeeper English course by the end of the second term.

### **Findings by Strategy Objective**

Table 5.2 shows the number of focal strategies for which first-term outcome differences between participants and nonparticipants are positive, neutral, or negative, broken out by

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<sup>6</sup>In many colleges, several different math courses may fulfill the gatekeeper requirement; if the student passed any one of those courses, the student is considered to have fulfilled the requirement.

<sup>7</sup>While term 1 outcomes include all cohorts, term 2 outcomes exclude students entering in fall 2011 (due to lack of follow-up data). In addition, the term 2 outcomes were all analyzed using logistic regression, which has additional sample-size requirements (discussed in Appendix A); some strategies could not meet these requirements and were excluded from term 2 analyses for that reason.

<sup>8</sup>The terms “significance,” “significant,” and “significantly” are used in this report to refer to the concept of “statistical significance,” that is, the likelihood that a difference arose by chance. Differences in this report are considered to be statistically significant if the probability that they arose by chance is less than 5 percent. Table 5.1 presents summary data. For detailed information on the coefficients and standard errors in the regression models, please see Appendix A.

**The Developmental Education Initiative**

**Table 5.1**

**Outcome Differences Associated with Participation  
in the DEI Focal Strategies**

Outcome Measured	Percentage of Focal Strategies for Which Outcome Difference Is:			Total	Number of Strategies for Which Outcome Was Measured
	Positive	Neutral	Negative		
<b><u>First-term outcomes</u></b>					
Credits earned in first term	45.2	45.2	9.6	100.0	31
GPA at end of first term	29.0	67.8	3.2	100.0	31
<b><u>Second-term outcomes</u></b>					
Persistence to beginning of second term	28.6	67.9	3.5	100.0	28
Passed gatekeeper English by end of second term	50.0	50.0	--	100.0	18
Passed gatekeeper math by end of second term	29.4	64.7	5.9	100.0	17
<b><u>All outcomes</u></b>	36.0	59.2	4.8	100.0	125 <sup>a</sup>

NOTES: The table shows outcomes associated with participation in the focal strategies; it cannot be inferred that participation caused these outcomes.

<sup>a</sup>This figure represents the total number of times that the 31 focal strategies were counted in measuring the outcome differences for all first-term and second-term outcomes considered together.

strategy objective. Table 5.3 presents parallel information for outcomes measured in the second term. Finally, Figure 5.1 summarizes the findings in graphic form.

The acceleration- and avoidance-oriented strategies were associated with outcomes that either are significantly better for participants than nonparticipants or, more commonly, are similar for the two groups. The few negative differences were all associated with strategies that fall under the rubric of support. Strategies that fall under the objective of instructional relevance — that is, strategies centered on contextualized instruction and collaborative learning — were

**The Developmental Education Initiative**

**Table 5.2**

**First-Term Outcome Differences Associated with Participation in the  
DEI Focal Strategies, by Strategy Objective**

Outcome Measured and Strategy Objective	Percentage of Focal Strategies for Which Outcome Difference Is:			Total	Number of Strategies for Which Outcome Was Measured
	Positive	Neutral	Negative		
<b><u>Credits earned in term</u></b>					
Acceleration	36.4	63.6	--	100.0	11
Avoidance	66.7	33.3	--	100.0	3
Instructional relevance	66.7	33.3	--	100.0	3
Support	42.9	35.7	21.4	100.0	14
All objectives	45.2	45.2	9.6	100.0	31
<b><u>GPA at end of term</u></b>					
Acceleration	18.2	81.8	--	100.0	11
Avoidance	33.3	66.7	--	100.0	3
Instructional relevance	66.7	33.3	--	100.0	3
Support	28.6	64.3	7.1	100.0	14
All objectives	29.0	67.8	3.2	100.0	31

NOTE: The table shows outcomes associated with participation in the focal strategies; it cannot be inferred that participation caused these outcomes.

especially likely to be associated with statistically significant and positive outcome differences. There are only three examples of such strategies, and it is risky to generalize from such a small sample. More rigorous studies confirm, however, that contextualized instruction in vocational programs and learning communities has helped students earn more course credits and progress



**The Developmental Education Initiative**

**Table 5.3**

**Second-Term Outcome Differences Associated with Participation in the  
DEI Focal Strategies, by Strategy Objective**

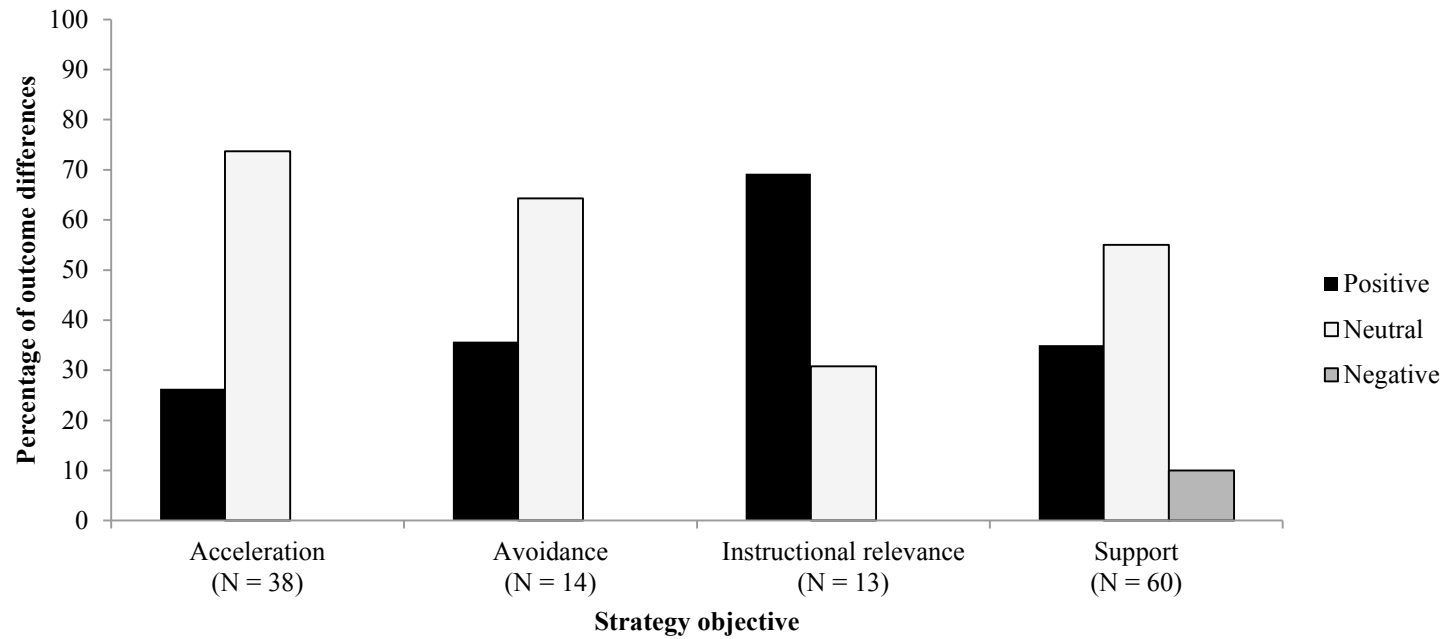
Outcome Measured and Strategy Objective	Percentage of Focal Strategies for Which Outcome Difference Is:			Total	Number of Strategies for Which Outcome Was Measured
	Positive	Neutral	Negative		
<b><u>Persistence to beginning of second term</u></b>					
Acceleration	--	100.0	--	100.0	9
Avoidance	66.7	33.3	--	100.0	3
Instructional relevance	66.7	33.3	--	100.0	3
Support	30.8	61.5	7.7	100.0	13
All objectives	28.6	67.9	3.5	100.0	28
<b><u>Passed gatekeeper English by end of second term</u></b>					
Acceleration	100.0	--	--	100.0	3
Avoidance	--	100.0	--	100.0	2
Instructional relevance	66.7	33.3	--	100.0	3
Support	40.0	60.0	--	100.0	10
All objectives	50.0	50.0	--	100.0	18
<b><u>Passed gatekeeper math by end of second term</u></b>					
Acceleration	25.0	75.0	--	100.0	4
Avoidance	--	100.0	--	100.0	3
Instructional relevance	100.0	--	--	100.0	1
Support	33.3	55.6	11.1	100.0	9
All objectives	29.4	64.7	5.9	100.0	17

NOTE: The table shows outcomes associated with participation in the focal strategies; it cannot be inferred that participation caused these outcomes.

The Developmental Education Initiative

Figure 5.1

Outcome Differences Associated with Participation in the DEI Focal Strategies, by Strategy Objective and Whether Difference Is Positive, Neutral, or Negative



NOTE: The figure shows outcomes associated with participation in the focal strategies; it cannot be inferred that participation caused these outcomes.

from developmental into college-level coursework.<sup>9</sup>

### **Degree of Scale-Up and Differences in Outcomes**

In general, as Chapter 3 documents, most of the focal strategies affected a modest percentage of students to whom they were targeted. It is reasonable to ask whether strategies that were scaled up to a greater extent also were more likely to be associated with statistically significant and positive differences between outcomes for participants and nonparticipants.

As in Chapter 3, two measures of scale-up were employed: (1) the number of students participating in each focal strategy as a percentage of the college's goal for that strategy during the 2010-2011 academic year and (2) the number of students participating in each focal strategy as a percentage of the strategy's target population in fall 2011. Along both measures, each focal strategy was sorted into one of three categories by extent of scale-up (whether the strategy reached 0 to 24 percent, 25 percent to 50 percent, or more than 50 percent of the goal or of the target populations) and into one of three categories by the valence of the outcome differences (positive, neutral, or negative). The results are presented in Appendix Table A.3 and Appendix Table A.4.

In general, strategies that reached more than 50 percent of their objectives were more likely to be associated with positive outcomes than strategies that reached smaller numbers of students. What is less clear is the reason for this finding. It may be that colleges that were more effective in setting realistic goals for their strategies and in meeting them were also more likely to take steps to ensure that their strategies were effective. Aside from this "top tier" of strategies, there is no evidence that strategies that reached between 25 percent and 50 percent of targeted students were associated with better outcomes than those that reached less than 25 percent of their target populations.

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<sup>9</sup>See Zachry Rutschow and Schneider, 2011. Their review of the research literature identifies placing developmental students into college-level courses with additional supports and providing modularized or compressed courses as other approaches that, according to relatively rigorous studies, have shown the greatest benefits for developmental students. For a review of the literature on contextualized instruction, see Perin (2011); for findings on structured forms of student collaboration, see Hodara (2011).

Because the acceleration and the support categories each include a diverse set of approaches, each category was examined more closely. Data presented in Appendix Table A.2 indicate that, among acceleration strategies, those involving modular strategies most commonly showed neutral differences, while the differences among paired strategies were neutral in approximately half the instances and positive in the remainder of the instances. Results for the support strategies, shown in the same table, suggest that the strategies focusing on study skills and mentoring showed a mix of positive, negative, and neutral differences, while approaches focusing on tutoring and supplemental instruction showed no negative differences. Because the number of examples of each specific strategy is small, these results should be regarded with a good deal of caution.

## Changes in Student Outcomes Over Time

As Chapter 4 makes clear, the DEI includes programs and policies other than those embodied in the focal strategies; arguably, then, students might benefit from the initiative whether they participated in the focal strategies or not. The next set of analyses addresses this question more directly, by tracking changes in students' outcomes across time, comparing average outcomes for cohorts of students who entered the participating colleges before and after the DEI was put into place.<sup>10</sup> As with the findings for the individual focal strategies, any differences in the outcomes for pre- and post-DEI cohorts cannot be taken as definitive evidence of the DEI's effectiveness (or lack of effectiveness). These differences could arise because of changes in the skill levels of students (if, for example, changes in labor market conditions induced better- or less-educated students to enroll). As with the analysis of outcomes associated with the strategies, the analysis excludes this alternative explanation for outcome differences to the extent possible by controlling for measured student characteristics, but it cannot control for unmeasured characteristics.<sup>11</sup> In addition, other changes in the colleges that occurred over the same time period but were completely unrelated to the DEI might also have helped to produce differences. At best, the findings of this analysis should again be regarded as suggestive of the DEI's potential to make a difference for students, but they are far from definitive.

Table 5.4 shows the results for the same five outcomes that are examined in the section above. In the table, a plus sign (+) indicates that the outcome level is significantly higher after the DEI; a minus sign (–) indicates that the average outcome level is significantly lower after the DEI; and a zero (0) indicates that the difference is not large enough to be statistically significant in either direction.<sup>12</sup>

First, across the 75 outcomes presented in the table (5 outcomes for each of the 15 colleges), 28 outcomes (37 percent) are significantly positive; 20 outcomes (27 percent) are significantly negative; and 27 outcomes (36 percent) are neither positive nor negative. In other words, on the whole, the post-DEI cohort achieved outcomes that are either significantly better or no worse than the outcomes of their pre-DEI counterparts.

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<sup>10</sup>The pre-DEI cohorts include students first enrolled between fall 2002 and fall 2009. The post-DEI cohorts include students first enrolled between winter or spring of the 2009-2010 academic year and fall 2011 (regardless of whether the student participated in any DEI focal strategies). Defining the DEI as beginning in winter or spring 2010 gives the colleges a “grace period” of several months for planning and piloting interventions.

<sup>11</sup>The measured characteristics that were controlled for include entry in the fall versus the spring term, gender, age, minority status, and level of developmental referral for each of the three developmental subjects. For more information about the analysis, see Appendix A.

<sup>12</sup>The post-DEI cohort for second-term outcomes excludes students who enrolled in fall 2011, since two terms of follow-up are not available for this group.

**The Developmental Education Initiative**

**Table 5.4**

**Outcomes of Post-DEI Cohorts Compared with  
Outcomes of Pre-DEI Cohorts**

College	Credits Earned in First Term	GPA in First Term	Persistence into Second Term	Passed Gatekeeper English by End of Second Term	Passed Gatekeeper Math by End of Second Term
A	+	+	-	-	-
B	+	+	0	0	0
C	+	-	+	+	-
D	+	+	+	+	+
E	-	0	0	+	+
F	0	-	+	0	-
G	0	0	+	0	0
H	+	-	0	0	0
I	0	-	0	+	+
J	0	0	0	+	0
K	0	-	+	+	-
L	-	-	+	-	-
M	-	-	-	-	0
N	+	+	0	0	0
O	+	0	0	+	+

NOTES: The table shows outcomes associated with belonging to a cohort of students entering college after the winter-spring term of the 2009-2010 academic year, when the DEI began; it cannot be inferred that the DEI caused these outcomes.

A plus sign (+) indicates that the average value of the outcome for students entering the college during or after the winter-spring term of the 2009-2010 academic year is greater than for students entering the college between fall 2002 and fall 2009 and that the difference is statistically significant at a level less than or equal to 5 percent.

A minus sign (-) indicates that the average value of the outcome for students entering the college during or after the winter-spring term of the 2009-2010 academic year is less than for students entering the college between fall 2002 and fall 2009 and that the difference is statistically significant at a level less than or equal to 5 percent.

A zero (0) indicates that the average value of the outcome for students entering the college during or after the winter-spring term of the 2009-2010 academic year does not differ significantly from that for students entering the college between fall 2002 and fall 2009.

Compared with students entering the colleges before the DEI was put in place, post-DEI cohorts were more likely to register statistically significant improvements on three outcomes: credits earned during their first term, persistence into the second term, and passing their college's gatekeeper English course by that term's end. Post-DEI entrants, however, were more

likely to have lower first-term GPAs than their pre-DEI counterparts. A possible explanation is that students who were taking accelerated courses or who were enrolled in learning communities faced more challenging work and achieved lower (though still passing) grades than pre-DEI students who were enrolled in standard developmental classes. Post-DEI students were also less likely to pass the gatekeeper course in math by the end of their second term. While this finding is not definitive, it merits further exploration, given the number of colleges that implemented modularized and/or computerized self-paced math as one of their focal strategies.<sup>13</sup>

At 6 of the 15 colleges, post-DEI students did either better or the same as earlier cohorts on the five outcomes that were measured, and at one of these colleges — Guilford Tech — students did significantly better than their pre-DEI counterparts on all five outcomes. At the remaining 9 colleges, post-DEI students gained ground on some outcomes relative to their pre-DEI peers but lost ground on other outcomes.

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<sup>13</sup>Of the four colleges that implemented a modularized and/or computerized math strategy and had sufficient data to perform comparisons, only one showed positive outcome differences. In contrast, English acceleration strategies tended to focus on paired courses; all three of these strategies with sufficient data to perform comparisons exhibited positive outcome differences.

## Chapter 6

# The DEI in Broader Perspective

The title of MDRC's interim report on the Developmental Education Initiative (DEI), *Scaling Up Is Hard to Do*, pithily summarizes that report's message in covering the first year of the initiative.<sup>1</sup> In the subsequent two years, the efforts of the colleges that participated in the demonstration have contributed important lessons to the relatively young field of scaling initiatives in higher education. The present report points to the salience of resources, communications, engagement, and a commitment to uniform instructional practice for scaling efforts. It also indicates that the DEI was the springboard for other discussions and reforms at the colleges.

Two years later, however, the message of the earlier report remains unchanged: Scaling up *is* hard to do. The findings suggest that the proportion of incoming students touched by any of the colleges' focal strategies doubled between fall 2009 and fall 2011. Still, most strategies fell considerably short of the numerical targets that the colleges had set for themselves, and most reached under half the students in their target populations at the demonstration's end.

The preceding chapter suggests that a number of the strategies (especially ones involving contextualization of instruction and collaborative learning) are associated with positive and statistically significant differences in student outcomes. While this evidence is promising, it cannot be taken as definitive because the analysis does not allow for causal conclusions; that is, one cannot infer that the strategies *caused* the positive outcomes. A much smaller number of strategies appears to be associated with significantly worse outcomes for students, and the majority of the strategies do not appear to be associated with either better or worse outcomes — although, again, causal inferences cannot be drawn.

On the whole, from the quantitative perspective, the DEI represents a modest improvement for the participating colleges. In some ways, this is not surprising. First, the initiative was about the scaling-up of specific strategies, not about a sweeping reform of developmental education, which might have produced stronger results. Second, the meaning of “scaling up” was largely left undefined. Had colleges been instructed at the outset to mount interventions that would reach very large proportions of developmental students, they might have elected to expand different strategies.

Third, while colleges were instructed to scale up effective practices, at the inception of the demonstration there was little robust evidence about just which practices *are* effective, to inform their choices about what to scale. Instead, colleges made decisions, at best, on the basis

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<sup>1</sup>See Quint et al. (2011).

of data that seemed to indicate that a particular strategy was associated with better outcomes for students. Only rarely were the findings grounded in strong enough research designs to conclude that the strategy had caused those outcomes to occur. A theory of change that “more is better” — the theory that essentially undergirded the DEI — cannot be expected to benefit students if the intervention being scaled up has not been shown through rigorous research to produce positive impacts in the first place. Unfortunately, the demonstration did not build in opportunities to solidify the evidentiary base. Thus, although the information in Chapter 5 suggests that some focal strategies fostered students’ progress and achievement more than others, it, too, is inconclusive.

Fourth, as Chapter 3 details, while adequate resources (including personnel, space, and materials), good communication (directed toward both staff and students), and commitment to a uniform mode of instruction facilitated scaling up, expansion was impeded when any of these factors was absent or in short supply. And even when the benefits of a particular strategy were explained to them, students could not always be persuaded to participate. Indeed, the nature of the student population at community colleges — more often than not part-time, and often juggling work and family responsibilities — is in itself an obstacle to scaling up, when the activities being scaled up are a matter of choice and when they are available only at select times and in specific locales that do not meet students’ needs. (Online instruction may be a partial solution to this problem, but it is unlikely to be appropriate for all students.)<sup>2</sup>

Finally, expanding many strategies takes time. This could be true as well of instructional strategies scaled up through “gentle fiat,” a process that essentially eliminated choice about how instructors would teach their classes. In one case where strategies were expanded in this way, a yearlong planning period was involved. When scale-up involves strategies that are voluntary rather than mandated and that, therefore, involve proselytization and eventual conversion of initially agnostic instructional staff, the time required for full scale-up is probably longer.

In this regard, it is pertinent to inquire into the future of the DEI’s innovations. And it appears that, for several reasons, the DEI will leave a lasting legacy at the participating colleges.

First, many of the focal strategies that were inaugurated or expanded under the DEI will be “institutionalized” — supported with regular college funding rather than grant dollars. At some colleges, leaders were committed from the start to developing or expanding strategies that they intended to sustain. As the president of Danville Community College put it:

My belief is that if you accept money from a foundation, you also should have in your college plan a commitment to the extent that you can to ensure that the broad goals of that grant continue, to ensure sustainability. When you accept

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<sup>2</sup>With regard to online instruction, see Jaggars (2012).



grant money, there's an assumption that you're really serious about integrating this into the culture of the college, the way we do things. We're not backing off of this, because we really believe in this.

Other institutions did not share this level of advance planning and commitment but nonetheless had decided to move forward with strategies that they deemed successful, especially if the strategies entailed redeployment of preexisting staff rather than the continued employment of new staff. (At a couple of institutions, positions of case managers who had been specifically hired for the DEI were especially at risk.)

Second, some lessons learned through the DEI will carry over into future initiatives. In this regard, it is significant that two DEI colleges — Guilford Technical Community College and Sinclair Community College — are participating in the Bill & Melinda Gates Foundation's new initiative, known as Completion by Design (CBD), which aims at restructuring the entire community college experience. These colleges are serving as the lead institutions in their states' "cadres" of colleges participating in CBD. Interventions mounted at these colleges as part of the DEI (among them, computerized and modularized math classes and mandatory orientation) will be implemented as part of CBD in both these lead colleges and other colleges in the cadres.

Finally, at some campuses, leaders entrusted responsibility for the DEI, and thereby brought increased visibility, to a new generation of talented and hard-working administrators. As these administrators move into new positions — two of them as heads of multi-college CBD cadres — they are likely to carry into new arenas DEI's message about the importance of student success. As the president of Sinclair Community College explained:

It has been vital to have an organization full of people engaged both individually and collectively in learning, especially when [because of retirements] half of the faculty is new. DEI has fostered a learning culture that has forced us to think about our mission, values, and principles. . . . It keeps our eye on the fact that low-income populations need educational access and equity.

In summary, the Developmental Education Initiative has informed the field of developmental education, resulting in much-needed conversations about what scaling means and about what is required for successful scale-up. At the colleges, the DEI has deepened and expanded the interventions and planted seeds for further change. At the same time, the results suggest caution about the speed with which community colleges can meet highly ambitious goals, when less ambitious objectives require time, resources, communication, engagement, and commitment.



**Appendix A**

**Technical Appendix**



## The DEI Data Set

All Achieving the Dream (AtD) institutions submit anonymized data on individual students' characteristics and outcomes to a data set managed by JBL Associates. The AtD data set — which has been used in numerous publications to document rates of developmental student progression and success<sup>1</sup> — includes demographic information, placement referral levels upon college entry, and term-by-term information on each student's cumulative grade point average (GPA) as well as developmental and gatekeeper course enrollment and performance. Round 1 and Round 2 AtD schools submitted data on cohorts of students entering the college in fall 2002 and in every fall thereafter. An AtD “cohort” includes all degree- or certificate-seeking undergraduate students (full- and part-time) entering the institution and attempting credits for the first time during the fall term. Students must be enrolled in courses creditable toward a degree, diploma, certificate, or other formal award, including vocational, occupational, or distance learning programs. Dual-enrolled high school students are excluded.<sup>2</sup> All students are followed longitudinally, with follow-up data for each cohort being submitted annually.

When they began the DEI, then, the colleges had already submitted data on all cohorts from fall 2002 to fall 2008. The requirements for the DEI database were expanded to allow for more precise tracking over the span of the three-year initiative, in two key ways. First, colleges were required to submit data not just on fall cohorts but also on entering winter/spring cohorts, beginning with winter/spring 2008. Second, colleges were required to identify a specific target population for each of their focal strategies. Then, separately for each strategy, the college was instructed to indicate on a term-by-term basis whether each targeted student was touched by the strategy (the treatment group) or not (the comparison group). Students who were not in the target group for a given strategy in a given term would have blank participation data for that strategy in that term.

As noted in Chapter 2, each strategy within each college could have a quite different target group. Some strategies targeted developmental math students while others targeted developmental English students; some targeted higher-level developmental students while others targeted lower-level students; some strategies targeted only first-term students while others targeted a mix of first-term and continuing students; some strategies targeted a mix of developmental and college-ready students; and several strategies included other “at-risk” criteria (not included in the DEI database) to determine eligibility for the target population. For some colleges, the defined target group shifted over time, as the college refined its strategy, or its understanding of which populations might benefit most strongly from the program. Within

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<sup>1</sup>Bailey, Jeong, and Cho (2010).

<sup>2</sup>The cohort does, however, include students who have prior high school credit or who have recently graduated from a dual enrollment program and are now college students.

the target population for the given term, each college also had latitude to determine whether each student was treated or untreated. For instructional strategies, the definition for the treatment and comparison groups was typically clear: “treated” students were targeted students who took strategy-based sections of a given course or curriculum, and “comparison” students were targeted students who took alternate versions of the curriculum. For support strategies, it was often less clear how to define the treatment and comparison. For example, for a tutoring program, one college was unsure whether to define a “treated” student as one who attended tutoring just once or on a more regular basis; the college eventually decided to define the tutoring treatment as receiving at least one hour of tutoring during the given quarter. As another example, a multicampus school initially rolled out a case management program at a subset of its campuses, and it initially defined each target student on one of those campuses as receiving the case management treatment, whether the student was contacted by a case manager or not. In later semesters, the college reconceptualized the treatment group as those students who received actual contact from a case manager.

For some strategies, treatment data were difficult to track in some semesters. For example, one program coordinator explained that in the first term of the treatment strategy, the support service data were marked down on spreadsheets by individual faculty and staff members; those sheets were inconsistently stored, collected, and entered into the system, and thus the true treatment numbers for that term are unknown. Such instances are documented in Appendix Table A.1 with the code “UNK” under the appropriate percentage column.

In other cases, the treatment data were collected regularly and consistently, but no comparison students were marked in the database for some or all terms. In those cases, the authors contacted each college and determined whether (1) each member of the target group was, indeed, served by the strategy during the terms in question — that is, no comparison students existed; or (2) the college simply did not flag the comparison students during the terms in question. In the latter case, the authors used the college’s definition of the target group (for example, “developmental English students”) to construct an appropriate comparison group within the DEI data set, flagging students who were in the strategy’s target group during the given semester but who had not yet been not treated by the strategy.

In some cases, it was not possible to construct an appropriate comparison group, because criteria necessary to define the target group were not available in the DEI data set. In these cases, the degree of scale for the strategy in the given semester was unknown. Such cases are documented in Appendix Table A.1 with the code “UNK” under the appropriate percentage column; those strategies are omitted from Appendix Table A.2.

The Developmental Education Initiative

Appendix Table A.1

Percentage of Target Population Served by Each Focal Strategy Each Fall and Spring Term Between Fall 2009 and Fall 2011, and Strategy Characteristics

Objective	Approach	College	New or Scaled Up	Percentage of Target Population Served This Term				
				Fall '09	Spring '10	Fall '10	Spring '11	Fall '11
Acceleration <sup>a</sup>	Modular	College F	N	0	0	0	0	87
Acceleration <sup>a</sup>	Modular	College F	N	0	0	96	91	91
Acceleration	Modular	College L	S	<1	<1	<1	<1	1
Acceleration <sup>a</sup>	Modular	College I	N	0	0	1	11	9
Acceleration	Modular	College G	N	0	36	9	82	34
Acceleration <sup>a</sup>	Modular	College J	N	0	0	0	59	30
Acceleration <sup>a</sup>	Modular	College M	N	15	29	24	17	UNK <sup>b</sup>
Acceleration <sup>a</sup>	Modular	College K	N	3	8	11	35	32
Acceleration	Modular	College A	S	2	17	14	25	27
Acceleration <sup>a</sup>	Modular	College A	S	3	7	8	10	11
Acceleration	Modular	College A	N	8	36	33	25	55
Acceleration <sup>a</sup>	Paired	College J	N	5	53	13	65	11
Acceleration	Paired	College N	S	9	12	13	15	16
Acceleration	Paired	College I	N	0	4	3	5	6
Avoidance	Test prep	College M	N	UNK <sup>c</sup>	UNK <sup>b</sup>	UNK <sup>c</sup>	1	UNK <sup>b</sup>
Avoidance <sup>a</sup>	Test prep	College K	S	5	11	6	8	3
Avoidance	Test prep	College H	S	24	27	19	11	20
Avoidance	Test prep	College D	N	0	0	31	19	26
Instructional relevance	Active learning	College N	S	29	61	76	62	71
Instructional relevance	Contextualization	College O	N	94	UNK <sup>c</sup>	94	93	97
Instructional relevance	Contextualization	College G	N	0	44	8	70	17
Support	Advising	College J	N	UNK <sup>b</sup>	UNK <sup>b</sup>	UNK <sup>b</sup>	UNK <sup>b</sup>	66
Support	Advising	College E	S	4	6	8	9	6
Support	Advising	College K	N	0	0	0	UNK <sup>c</sup>	UNK <sup>c</sup>
Support	Advising	College D	S	41	28	42	54	69
Support	Advising	College D	N	0	26	16	15	0

(continued)

**Appendix Table A.1 (continued)**

Objective	Approach	College	New or Scaled Up	Percentage of Target Population Served This Term				
				Fall '09	Spring '10	Fall '10	Spring '11	Fall '11
Support	Advising	College N	S	6	7	12	11	17
Support	Advising	College G	S	0	100	100	99	100
Support	Advising	College O	S	46	56	83	81	77
Support	Advising	College O	S	12	32	41	60	42
Support	Study skills	College B	S	15	UNK <sup>b</sup>	20	23	29
Support <sup>a</sup>	Study skills	College C	S	4	5	5	6	5
Support	Study skills	College E	S	6	5	12	8	4
Support	Study skills	College L	S	0	0	0	1	1
Support	Study skills	College L	S	4	UNK <sup>b</sup>	4	7	25
Support	Tutoring	College E	S	0	27	UNK <sup>c</sup>	47	27
Support	Tutoring	College H	S	2	3	3	3	2
Support	Tutoring	College H	S	2	3	4	4	3
Support <sup>a</sup>	Tutoring	College C	S	21	40	26	41	30
High school support	NA	College I	N	0	0	27	6	86
High school support	NA	College C	S	UNK <sup>c</sup>	UNK <sup>c</sup>	UNK <sup>c</sup>	UNK <sup>c</sup>	UNK <sup>c</sup>
NA	NA	College J	N	NA	NA	NA	NA	NA
NA	NA	College M	N	14	100	UNK <sup>b</sup>	100	100
NA	NA	College F	N	NA	NA	NA	NA	NA
NA	NA	College F	N	NA	NA	NA	NA	NA
NA	NA	College H	N	NA	NA	NA	NA	NA

SOURCE: MDRC and CCRC calculations from colleges' reports to JBL.

NOTES: UNK = Unknown.

NA = Not available.

The table includes N = 46 focal strategies. Grayed-out rows (N = 7) are excluded from all Chapter 3 tables and figures because they could not be classified according to approach. Additional strategies had insufficient data for inclusion in Chapter 3 tables and figures (due to unknown percentages in either fall 2009 or fall 2011), resulting in N = 35 strategies.

<sup>a</sup>The comparison group was constructed from the data, based on the school's definition of the target group.

<sup>b</sup>The sample size was not known for this term.



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Appendix Table A.2

Differences in Outcomes Between Targeted Students Who Participated and Who Did Not Participate in Each Focal Strategy During Their First Term

College	Objective	Approach	Credits	GPA	Persist	Pass English	Pass Math
			Earned	Term 1	to Term 2	Gatekeeper	Gatekeeper
			Term 1	Term 1	to Term 2	by Term 2	by Term 2
			Coefficient	Coefficient	Coefficient	Coefficient	Coefficient
			(SE)	(SE)	(SE)	(SE)	(SE)
College F	Acceleration <sup>a</sup>	Modular	IN	IN	IN	IN	NA
College F	Acceleration <sup>a</sup>	Modular	IN	IN	IN	NA	IN
College L	Acceleration	Modular	IN	IN	IN	NA	IN
College I	Acceleration <sup>a</sup>	Modular	-0.62 (0.45)	-0.14 (0.10)	0.24 (0.24)	NA	-0.31 (0.38)
College G	Acceleration	Modular	0.85 (1.58)	-0.09 (0.33)	-1.04 (0.93)	NA	0.54 (0.72)
College J	Acceleration <sup>a</sup>	Modular	-2.11 (1.08)	0.10 (0.34)	IN	IN	NA
College M	Acceleration <sup>a</sup>	Modular	-0.39 (0.56)	-0.04 (0.14)	-0.05 (0.26)	NA	IN
College K	Acceleration <sup>a</sup>	Modular	0.09 (0.14)	0.01 (0.05)	0.05 (0.10)	NA	-0.36 (0.18)
College A	Acceleration	Modular	0.62* (0.26)	0.21* (0.09)	0.09 (0.25)	NA	IN

(continued)

**Appendix Table A.2 (continued)**

College	Objective	Approach	Credits	GPA	Persist	Pass English	Pass Math
			Earned	Term 1	to Term 2	Gatekeeper	Gatekeeper
			Term 1	Term 1	to Term 2	by Term 2	by Term 2
			Coefficient	Coefficient	Coefficient	Coefficient	Coefficient
			(SE)	(SE)	(SE)	(SE)	(SE)
College A	Acceleration <sup>a</sup>	Modular	0.84* (0.34)	0.14 (0.13)	0.27 (0.28)	NA	0.77* (0.37)
College A	Acceleration	Modular	0.49 (0.49)	0.01 (0.11)	IN	IN	NA
College J	Acceleration <sup>a</sup>	Paired	1.36* (0.56)	0.45** (0.17)	-0.28 (0.30)	1.73*** (0.29)	NA
College N	Acceleration	Paired	1.63*** (0.46)	0.00 (0.14)	0.32 (0.24)	0.47* (0.23)	NA
College I	Acceleration	Paired	-0.06 (0.61)	0.04 (0.14)	-0.13 (0.27)	1.31*** (0.28)	NA
College M	Avoidance	Test prep	IN	IN	IN	IN	IN
College K	Avoidance <sup>a</sup>	Test prep	0.56** (0.18)	0.34*** (0.06)	0.80*** (0.12)	0.21 (0.11)	-0.10 (0.20)
College H	Avoidance	Test prep	0.41 (0.69)	0.16 (0.14)	0.27 (0.36)	NA	-0.39 (0.44)
College D	Avoidance	Test prep	0.55* (0.23)	-0.02 (0.07)	0.30* (0.14)	0.22 (0.17)	0.50 (0.28)
College N	Instructional relevance	Active learning	2.98*** (0.23)	0.33*** (0.07)	0.72*** (0.11)	0.70*** (0.13)	0.77*** (0.16)

(continued)

**Appendix Table A.2 (continued)**

College	Objective	Approach	Credits	GPA	Persist	Pass English	Pass Math
			Earned	Term 1	to Term 2	Gatekeeper	Gatekeeper
			Term 1	Term 1	to Term 2	by Term 2	by Term 2
			Coefficient	Coefficient	Coefficient	Coefficient	Coefficient
			(SE)	(SE)	(SE)	(SE)	(SE)
College O	Instructional relevance	Contextualization	3.39*** (0.26)	0.61*** (0.09)	1.11*** (0.17)	1.77** (0.59)	NA
College G	Instructional relevance	Contextualization	0.07 (1.38)	0.01 (0.29)	-0.43 (0.86)	-0.83 (0.74)	NA
College J	Support	Advising	IN	IN	IN	IN	IN
College E	Support	Advising	1.37*** (0.17)	0.10* (0.05)	0.32*** (0.08)	0.46*** (0.10)	-0.15 (0.28)
College K	Support	Advising	IN	IN	IN	IN	IN
College D	Support	Advising	0.71*** (0.14)	-0.04 (0.04)	0.20** (0.08)	0.48*** (0.10)	-0.07 (0.18)
College D	Support	Advising	0.14 (0.25)	0.46*** (0.07)	0.05 (0.13)	-0.07 (0.17)	0.32 (0.29)
College N	Support	Advising	-1.08* (0.48)	-0.04 (0.13)	0.29 (0.24)	-0.17 (0.24)	-0.65 (0.34)
College G	Support	Advising	IN	IN	IN	IN	IN
College O	Support	Advising	-0.38 (0.39)	0.20 (0.14)	0.60 (0.37)	-0.10 (0.49)	NA
College O	Support	Advising	-0.83*** (0.23)	0.01 (0.08)	-0.34 (0.19)	-0.21 (0.22)	NA

(continued)

**Appendix Table A.2 (continued)**

College	Objective	Approach	Credits	GPA	Persist	Pass English	Pass Math
			Earned	Term 1	to Term 2	Gatekeeper	Gatekeeper
			Term 1	Term 1	to Term 2	by Term 2	by Term 2
			Coefficient	Coefficient	Coefficient	Coefficient	Coefficient
			(SE)	(SE)	(SE)	(SE)	(SE)
College B	Support	Study skills	IN	IN	IN	IN	IN
College C	Support <sup>a</sup>	Study skills	1.40*** (0.13)	0.12*** (0.03)	0.24** (0.09)	0.76*** (0.08)	0.81*** (0.09)
College E	Support	Study skills	0.12 (0.39)	-0.04 (0.11)	-0.23 (0.19)	NA	0.84** (0.32)
College L	Support	Study skills	0.01 (0.32)	-0.20* (0.09)	-0.22 (0.17)	NA	IN
College L	Support	Study skills	-0.50*** (0.07)	0.07*** (0.02)	-0.38*** (0.05)	0.09 (0.07)	-1.93*** (0.26)
College E	Support	Tutoring	1.08 (0.80)	0.39 (0.21)	IN	IN	IN
College H	Support	Tutoring	3.14*** (0.71)	0.07 (0.15)	0.15 (0.30)	NA	0.10 (0.47)
College H	Support	Tutoring	1.99* (0.86)	0.33 (0.17)	0.62 (0.35)	0.50 (0.36)	NA
College C	Support <sup>a</sup>	Tutoring	0.84*** (0.06)	0.00 (0.02)	0.26*** (0.04)	0.58*** (0.04)	0.53*** (0.05)
College C	High school support	NA	IN	IN	IN	IN	IN

(continued)

**Appendix Table A.2 (continued)**

College	Objective	Approach	Credits	GPA	Persist	Pass English	Pass Math
			Earned	Term 1	to Term 2	Gatekeeper	Gatekeeper
			Term 1	Term 1	to Term 2	by Term 2	by Term 2
			Coefficient	Coefficient	Coefficient	Coefficient	Coefficient
			(SE)	(SE)	(SE)	(SE)	(SE)
College I	High school support	NA	IN	IN	IN	IN	IN
College F	NA	NA	IN	IN	IN	IN	IN
College F	NA	NA	IN	IN	IN	IN	IN
College H	NA	NA	IN	IN	IN	IN	IN
College J	NA	NA	IN	IN	IN	IN	IN
College M	NA	NA	IN	IN	IN	IN	IN

NOTES: NA = Not available.

IN = insufficient sample size (N) for calculation.

The table includes N = 46 focal strategies. Each cell shows the Equation (1) (for credits earned and GPA) or Equation (2) (for persistence and gatekeeper performance)  $\beta_1$  coefficient and standard error, where  $x_1 = 1$  indicates treatment and  $x_1 = 0$  indicates comparison group membership. Tables in Chapter 5 include only strategies with a valid coefficient for the given outcome under examination.

Statistical significance levels are indicated as follows: \*\*\* = 1 percent; \*\* = 5 percent; \* = 10 percent.

<sup>a</sup>The comparison group was constructed from the data, based on the school's definition of the target group.

## Comparison of Outcome Differences Between Participants and Nonparticipants in Individual Interventions

The regression models summarized in Appendix Table A.2 were performed separately for each individual strategy. Each model examined students who were in the target group for the given intervention in their *first* semester and compared outcomes between those who were treated in their first semester and outcomes for those who were not. Regression models were performed only for the outcomes that were relevant to the given strategy. For example, for a math-oriented strategy, English enrollment and passing models would not be estimated; these models are replaced with the code “NA” (“Not Applicable”) in Appendix Table A.2.

The multiple regression models control for term of entry (dummy-coded), gender, age (over/under 25), minority status, level of referral in each of the three developmental subjects, and whether the student was involved in another DEI intervention in the same term. The inclusion of term of entry as a control effectively compares treatment and comparison students within the same term, which is important, given that several strategies shifted the definition of the target population across terms. Other demographic variables available in the data set include whether the student was attending college for the first time or had previously attended another college, whether the student had been a dual-enrolled high school student, and whether the student was the first in the family to attend college. Unfortunately, some schools did not collect these data elements and were unable to include them in the DEI data set. Accordingly, their inclusion in the regression models would result in a more complex, more controlled model for some strategies and in a simpler model for other strategies. In order to remain consistent in the method across schools and strategies, covariates were limited to those that were reported by all schools. The DEI data set also includes more precise categorizations of ethnicity (that is, white, Hispanic, black, Asian, or other). These ethnic classifications were collapsed into a single minority-status dummy variable due to convergence issues with the logistic regression models, as discussed in more detail below.

To ensure sufficient data to allow for reliable treatment estimates, regression models were performed only when at least 50 treatment and 50 comparison observations were available to the model. (Further restrictions were also placed on logistic regression models; see below.) For continuous outcomes (credits earned and continuous GPA), analyses were performed separately within each strategy, using a classic linear multiple regression model:

$$y = \beta_0 + x_1\beta_1 + X\beta + \varepsilon \quad (1)$$

Where  $x_1$  indicates the treatment dummy (with the value 1 indicating treatment and 0 indicating comparison group membership) and  $X$  represents the vector of covariates. The value of the  $\beta_1$  coefficient and its standard error are shown in Appendix Table A.2. These coefficients can be interpreted in terms of the original scale of the outcome variable. For example, cumulative GPA

varies from 0.0 to 4.0. A coefficient of 0.10 for first-term GPA would indicate that the treatment is associated with an increase of a tenth of a point in GPA. As an illustration, comparison students might have a first-term GPA of 2.0, while treatment students might have a first-term GPA of 2.1.

For binary outcomes (persistence, math gatekeeper enrollment and passing, and English gatekeeper enrollment and passing), analyses were performed separately within each strategy, using an analog of Equation (1) in the logistic regression context:

$$\text{logit}(y) = \beta_0 + x_1\beta_1 + X\beta + \varepsilon \quad (2)$$

The resulting  $\beta_1$  is a logit coefficient. As a rough rule of thumb, these coefficients can be interpreted by dividing the coefficient by 4; the resulting number gives a sense of the maximum increase (or decrease) in the probability of the outcome given a movement from the comparison to the treatment group. For example, a logit of 0.50 for student persistence into the second term, when divided by 4, yields 0.125, or 12.5 percent. As an illustration, if comparison students have a 50 percent chance of persisting to Term 2, then treatment students would have approximately a 62.5 percent chance of doing so.<sup>3</sup>

Logistic regressions can be problematic when sample sizes are low; if the data matrix is too sparse (for example, it has few or zero observations for certain cells), then the model cannot properly converge, and the resulting estimates cannot be trusted. In initial test runs with the logistic regression models, a large proportion of models failed to converge. Simplifying the set of ethnicity variables to a single minority-status dummy code ameliorated the sparsity problem for several smaller-sample strategies. The remaining nonconvergent models' sparsity problems seemed centered on few or no observations in one or more of the treatment-by-outcome cells. Instituting a rule of a minimum of 5 observations in each treatment-by-outcome cell eliminated the remaining strategies from consideration in terms of logistic regression modeling. In Appendix Table A.2, these models are noted as "IN," as having Insufficient N.

For both types of models, sample sizes vary widely across strategies: Some strategies served thousands of students across the time frame under study, while others served just a few. In general, sample sizes for the regressions that are summarized in Appendix Table A.2 are smaller than the totals for the strategies, as the regressions include only first-semester target students while the strategy counts include both first-semester and continuing target students. Typically, however, the bulk of target students were first-semester students.

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<sup>3</sup>This rule of thumb works best when the dependent variable hovers near a 50 percent chance for the positive outcome. If the chance of the positive outcome is very low (for example, 5 percent) or very high (for example, 95 percent), the change in probability associated with a given logit will be much less than that given by the rule of thumb.

In addition to variation in sample size across strategies, sample sizes for a given strategy also vary across the time frame of the outcome examined. That is, all first-semester treatment and comparison students are included in the Term 1 outcomes, while only students with next-term follow-up data can be examined for the Term 2 outcomes (thus excluding the fall 2011 cohort, for whom winter/spring 2012 data are not yet available).

In general, the sample sizes for each regression model can be intuited from the size of the coefficient's standard error, relative to the scale of the outcome under study. When considering the same outcome, those strategies with the smallest standard errors tend to have large sample sizes (often in the thousands), while those strategies with the largest standard errors tend to have small sample sizes (often nearing the minimum sample size of 100). This, of course, illustrates the inverse relationship between sample size and the power to detect an effect: Even a large estimated effect may not be statistically significant if the sample size is small and, thus, the standard error is large.

Note that no adjustments are applied for multiple significance testing across the regression models. Pragmatically, given the number of models performed, it is unlikely that any coefficient would be significant if such adjustments were applied. Results that are significant at an unadjusted p-value of less than or equal to 5 percent are indicated in Appendix Table A.2 in order to provide an overall portrait of the areas where positive or negative results seem to be clustered, rather than to attempt to judge the significance of any particular model or program.

Appendix Tables A.3 and A.4 present summary information about the relationship between the direction of outcome differences (whether they are positive, negative, or neutral) and the extent of participation in the focal strategies. Appendix Table A.3 measures extent of participation in the focal strategies against the goals that colleges set for themselves. Appendix Table A.4 instead measures participation in the focal strategies as a percentage of the target populations for these strategies.

## **Comparison of College-Level Outcome Differences Before and After Implementation of the DEI**

Multiple regression was also used to estimate the change in outcomes subsequent to the implementation of the DEI, separately for each college. Using Equation (1) for continuous outcomes and Equation (2) for binary outcomes,  $x_1$  indicates the timing of the student's entry into college, where the value 1 indicates entry before DEI implementation and the value 0 indicates entry after DEI implementation. It is difficult to determine with clear certainty when "DEI implementation" was achieved. Before fall 2009, colleges had been implementing AtD-related developmental education reforms and programming, but they often did so on a relatively small scale.



**The Developmental Education Initiative**

**Appendix Table A.3**

**Outcome Differences Associated with Participation in the  
DEI Focal Strategies, by Proportion of  
2010-2011 Student Participation Goals Attained**

Outcome Measured and Proportion Attained	Percentage of Focal Strategies for Which Outcome Difference Is:				Number of Strategies for Which Outcome Was Measured
	Positive	Neutral	Negative	Total	
<b><u>Credits earned in Term 1</u></b>					26
Less than 25%	44.4	44.4	11.1	100.0	
25 to 50%	28.6	71.4	0.0	100.0	
More than 50%	60.0	30.0	10.0	100.0	
<b><u>GPA earned in Term 1</u></b>					26
Less than 25%	33.3	55.6	11.1	100.0	
25 to 50%	14.3	85.7	0.0	100.0	
More than 50%	40.0	60.0	0.0	100.0	
<b><u>Persistence to next term</u></b>					23
Less than 25%	14.3	71.4	14.3	100.0	
25 to 50%	16.7	83.3	0.0	100.0	
More than 50%	50.0	50.0	0.0	100.0	
<b><u>Pass English by end of Term 2</u></b>					13
Less than 25%	0.0	100.0	0.0	100.0	
25 to 50%	50.0	50.0	0.0	100.0	
More than 50%	71.4	28.6	0.0	100.0	
<b><u>Pass math by end of Term 2</u></b>					17
Less than 25%	20.0	60.0	20.0	100.0	
25 to 50%	25.0	75.0	0.0	100.0	
More than 50%	37.5	62.5	0.0	100.0	

NOTE: The table shows outcomes associated with participation in the focal strategies; it cannot be inferred that participation caused these outcomes.

**The Developmental Education Initiative**

**Appendix Table A.4**

**Outcome Differences Associated with Participation in the  
DEI Focal Strategies, by Proportion of Target Population  
Served in Fall 2011**

Outcome Measured and Proportion Attained	Percentage of Focal Strategies for Which Outcome Difference Is:				Number of Strategies for Which Outcome Was Measured
	Positive	Neutral	Negative	Total	
<b><u>Credits earned in Term 1</u></b>					30
Less than 25%	56.3	37.5	6.3	100.0	
25 to 50%	22.2	55.6	22.2	100.0	
More than 50%	60.0	40.0	0.0	100.0	
<b><u>GPA earned in Term 1</u></b>					30
Less than 25%	31.3	62.5	6.3	100.0	
25 to 50%	11.1	88.9	0.0	100.0	
More than 50%	60.0	40.0	0.0	100.0	
<b><u>Persistence to next term</u></b>					27
Less than 25%	25.0	75.0	0.0	100.0	
25 to 50%	33.3	50.0	16.7	100.0	
More than 50%	40.0	60.0	0.0	100.0	
<b><u>Pass English by end of Term 2</u></b>					18
Less than 25%	60.0	40.0	0.0	100.0	
25 to 50%	25.0	75.0	0.0	100.0	
More than 50%	50.0	50.0	0.0	100.0	
<b><u>Pass math by end of Term 2</u></b>					17
Less than 25%	22.2	77.8	0.0	100.0	
25 to 50%	20.0	60.0	20.0	100.0	
More than 50%	66.7	33.3	0.0	100.0	

NOTE: The table shows outcomes associated with participation in the focal strategies; it cannot be inferred that participation caused these outcomes.

During the DEI “kickoff semester” of fall 2009, most colleges were engaged in planning in terms of program scale-up, policy changes, or the implementation of entirely new programs, with more substantial implementation of these plans occurring in spring or fall 2010. Accordingly, cohorts entering in fall 2009 or earlier were defined as “pre-DEI” cohorts, and those entering in spring 2010 or later were defined as “post-DEI” cohorts.

Although the DEI focused primarily on developmental students, this analysis includes all new students, for three reasons. First, avoidance strategies are designed to move some students from developmental to college-ready. By including all new students, this analysis can account for the outcomes of those who were moved into the college-ready category; in contrast, if only developmental students were included, the avoidance strategies would likely remove the best-prepared or highest-level developmental students from the sample, potentially dampening outcomes. Second, many DEI strategies and policies affected incoming college-ready students as well as developmental students. And third, for most schools, the majority of the entering population is classified as developmental; thus, the inclusion of college-ready students — even if DEI had no effect on these students — should not “water down” the results much.

For these multiple regression equations, the vector of covariates  $X$  includes entry in a fall term versus spring term, gender, age, minority status, and level of developmental referral for each of the three developmental subjects. The  $\beta_1$  coefficient for each college and its associated standard error are shown in Appendix Table A.5. As with the individual intervention models, the college-level models vary in their sample sizes, as some colleges had large enrollments and others had smaller enrollments. However, as Table 1.1 (Chapter 1) shows, all the colleges had enrollments of several thousands of students; thus, the variations in sample size have less substantial impacts on standard errors and on the power of the model to detect an effect.

Given that there are multiple colleges with sufficient data to run the overall regression model, an analyst might also consider estimating a *multilevel model* (also known as a *random-effects model* or a *hierarchical linear model*) across the entire set of colleges and students, releasing the pre- versus post-DEI coefficient to vary across colleges, and using the college-specific variation to estimate the individual college’s coefficient. With a large number of colleges, the multilevel approach would be both more efficient and more reliable. However, given a small number of colleges (only 14 reported developmental referral data), there are insufficient college-level units to satisfy the assumption of normality in the distribution of college-level coefficients. Accordingly, in this report, each college’s coefficient was estimated in a separate model.

**The Developmental Education Initiative**

**Appendix Table A.5**

**Differences in Outcomes Between Students Entering Each College  
Before and After DEI Implementation**

College	Credits Earned Term 1	GPA Term 1	Persist to Term 2	Pass English Gatekeeper by Term 2	Pass Math Gatekeeper by Term 2
	Coefficient (SE)	Coefficient (SE)	Coefficient (SE)	Coefficient (SE)	Coefficient (SE)
College A	0.67*** (0.08)	0.06* (0.03)	-0.28*** (0.05)	-0.27*** (0.06)	-0.17* (0.08)
College B	0.50*** (0.08)	0.08** (0.03)	0.02 (0.05)	0.04 (0.07)	-0.04 (0.09)
College C	1.24*** (0.03)	-0.09*** (0.01)	0.20*** (0.02)	0.18*** (0.02)	-0.06* -0.03
College D	0.26*** (0.07)	0.16*** (0.02)	0.16*** (0.04)	0.10** (0.04)	0.27*** (0.06)
College E	-0.92*** (0.06)	0.03 (0.02)	0.00 (0.03)	0.14*** (0.04)	0.17** (0.06)
College F	-0.04 (0.23)	-0.17** (0.06)	0.38** (0.12)	-0.16 (0.14)	-1.07* -0.44
College G	-0.06 (0.19)	-0.05 (0.04)	0.32** (0.10)	0.06 (0.08)	-0.08 (0.09)
College H	0.39** (0.15)	-0.12*** (0.03)	0.03 (0.07)	0.03 (0.07)	0.02 (0.09)
College I	0.05 (0.06)	-0.12*** (0.01)	-0.02 (0.03)	0.22*** (0.03)	0.14*** (0.04)
College J	0.12 (0.13)	-0.04 (0.03)	0.02 (0.07)	0.15* (0.07)	-0.04 (0.12)
College K	-0.03 (0.04)	-0.14*** (0.01)	0.08** (0.03)	0.25*** (0.03)	-0.20*** (0.04)
College L	-0.40*** (0.03)	-0.20*** (0.01)	0.10*** (0.02)	-0.10*** (0.02)	-0.28*** (0.03)
College M	-0.74*** (0.17)	-0.25*** (0.04)	-2.17*** (0.09)	-0.19* (0.09)	0.12 (0.21)
College N	0.36* (0.15)	0.14** (0.04)	-0.14 (0.08)	0.15 (0.09)	-0.09 (0.12)

(continued)

**Appendix Table A.5 (continued)**

College	Credits Earned Term 1	GPA Term 1	Persist to Term 2	Pass English Gatekeeper by Term 2	Pass Math Gatekeeper by Term 2
	Coefficient (SE)	Coefficient (SE)	Coefficient (SE)	Coefficient (SE)	Coefficient (SE)
College O	0.96*** (0.05)	0.02 (0.02)	0.03 (0.04)	0.32*** (0.04)	0.54*** (0.06)

SOURCE: MDRC and CCRC calculations from colleges' reports to JBL.

NOTES: Each cell shows the Equation (1) (for credits earned and GPA) or Equation (2) (for persistence and gatekeeper performance)  $\beta_1$  coefficient and standard error, where  $x_1 = 1$  indicates post-DEI entry and  $x_1 = 0$  indicates pre-DEI entry.

Statistical significance levels are indicated as follows: \*\*\* = 1 percent; \*\* = 5 percent; \* = 10 percent.



## References

- Bailey, Thomas, Dong Wook Jeong, and Sung-Woo Cho. 2010. "Referral, Enrollment, and Completion in Developmental Education Sequences in Community Colleges." *Economics of Education Review* 29: 255-270.
- Bloom, Paul N., and Aaron K. Chatterji. 2009. "Scaling Social Entrepreneurial Impact." *California Management Review* 51, 3.
- Carnevale, Anthony P., Nicole Smith, and Jeff Strohl. 2010. *Help Wanted: Projections of Jobs and Education Requirements Through 2018*. Report prepared by the Georgetown University Center on Education and the Workforce (October).  
Web site: <http://cew.georgetown.edu/jobs2018>.
- Hodara, Michelle. 2011. "Reforming Mathematics Classroom Pedagogy: Evidence-Based Findings and Recommendations for the Developmental Math Classroom." CCRC Working Paper No. 27, Assessment of Evidence Series. New York: Columbia University, Teachers College, Community College Research Center.  
Web site: <http://ccrc.tc.columbia.edu/Publication.asp?uid=858>.
- Jaggars, Shanna Smith. 2012. In M. G. Moore (ed.), *Handbook of Distance Education*, 3rd ed. New York: Routledge.
- Jenkins, Davis, Shanna Smith Jaggars, and Josipa Roksa. 2009. "Promoting Gatekeeper Course Success Among Community College Students Needing Remediation: Findings and Recommendations from a Virginia Study (Summary Report)." New York: Columbia University, Teachers College, Community College Research Center.  
Web site: <http://ccrc.tc.columbia.edu/Publication.asp?uid+714>.
- Parcell, Abby. 2012. *More to Most: Scaling Up Effective Community College Practices*. Durham, NC: MDC. Web site: <http://www.more2most.org>.
- Perin, Dolores. 2011. "Facilitating Student Learning Through Contextualization: A Review of Evidence." *Community College Review* (July). New York: Columbia University, Teachers College, Community College Research Center, Institute on Education and the Economy. Web site: <http://ccrc.tc.columbia.edu/Publication.asp?uid=954>.
- Quint, Janet, D. Crystal Byndloss, Herbert Collado, Alissa Gardenhire, Asya Magazinnik, Genevieve Orr, Rashida Welbeck, and Shanna S. Jaggars. 2011. *Scaling Up Is Hard To Do: Progress and Challenges During the First Year of the Achieving the Dream Developmental Education Initiative*. New York: MDRC.
- White House Summit on Community Colleges. 2010. "Building American Skills by Strengthening Community College." Fact sheet prepared for the White House Summit on Community Colleges (October 5).  
Web site: <http://www.whitehouse.gov/sites/default/files/uploads/White-House-Summit-on-Community-Colleges-Fact-Sheet-100510.pdf>.
- Zachry Rutschow, Elizabeth, and Emily Schneider. 2011. *Unlocking the Gate: What We Know About Improving Developmental Education*. New York: MDRC.





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