



OPENING DOORS

SERVING COMMUNITY COLLEGE STUDENTS ON PROBATION

Four-Year Findings from Chaffey College's
Opening Doors Program

Michael Weiss
Thomas Brock
Colleen Sommo
Timothy Rudd
Mary Clair Turner

November 2011

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Overview

Community colleges across the United States face a difficult challenge. On the one hand, they are “open access” institutions, with a mission to serve students from all backgrounds and at varying levels of college readiness. On the other hand, they must uphold high academic standards in order to maintain accreditation and prepare students for employment or transfer to four-year schools. How, then, can community colleges best serve students who want to learn but do not meet minimum academic standards?

Chaffey College, a large community college located about 40 miles east of Los Angeles, began to wrestle with this question early in the twenty-first century. Under the auspices of a national demonstration project called Opening Doors, Chaffey developed a program designed to increase probationary students’ chances of succeeding in college. Chaffey’s program included a “College Success” course, taught by a counselor, which provided basic information on study skills and the requirements of college. As part of the course, students were expected to complete five visits to “Success Centers,” where their assignments, linked to the College Success course, covered skills assessment, learning styles, time management, use of resources, and test preparation.

In 2005, MDRC collaborated with Chaffey College to evaluate the one-semester, voluntary Opening Doors program. In 2006, the program was improved to form the two-semester Enhanced Opening Doors program, in which probationary students were told that they were required to take the College Success course. In MDRC’s evaluation of each program, students were randomly assigned either to a program group that had the opportunity to participate in the program or to a control group that received the college’s standard courses and services. This report presents the outcomes for both groups of students in the Enhanced Opening Doors evaluation for four years after they entered the study. The findings include:

- **The message matters — optional program activities had lower participation rates compared with required program activities.**
- **Chaffey’s Enhanced Opening Doors program had positive short-term effects.** When the two program semesters were complete, students in the program group had earned more credits than students in the control group and were nearly twice as likely as control group students to be in good academic standing.
- **Despite the program’s encouraging short-term effects, it did not meaningfully improve students’ long-term academic outcomes.** Four years after the study began, program and control group students had made similar academic progress. Strikingly, during that time, only 7 percent of *all* students in the study had earned a degree or certificate.

This report presents detailed findings from Chaffey’s Enhanced Opening Doors initiative, including the cost and cost-effectiveness of the program, and considers the implications of this research for designing services for probationary students in community college.

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Preface

Like many community colleges, Chaffey College enrolls large numbers of students who struggle academically and are eventually placed on probation for their poor academic performance. Many of these students ultimately leave college without earning a credential. “College Success” courses, which teach students the skills they need to navigate their way successfully through school, are one popular strategy used on numerous college campuses to improve students’ chances of succeeding after being placed on academic probation.

Through a national demonstration project called Opening Doors, Chaffey’s leaders developed a program designed to increase probationary students’ chances of succeeding. The key feature of the program is a three-credit College Success course, which is taught by a college counselor. As part of the course, students are expected to visit the college’s “Success Centers,” where individualized and group instruction in math, reading, and writing is available.

This report describes Chaffey’s program and its effects on students’ academic outcomes four years after students entered the program. This random assignment experimental study found that during the two semesters when students were eligible to participate in the program, they earned more credits, had a higher grade point average, and were more likely to be in good academic standing than students in a control group who did not participate in the program. Most of these findings, though, were a result of the credits earned in the College Success course, credits that are not applicable toward a degree and cannot be transferred to another institution. Nonetheless, the findings are notable because, in spite of adding the College Success class to their regular course load, students in the program kept pace with the control group (most of whom did not take the course) on academic outcomes. This finding suggested that when the program ended, the skills and study habits gained from the course might transfer to other classes. However, despite its early promise, the program’s effects were not sustained and did not translate into meaningful impacts on students’ academic success over the long term.

These sobering findings are a reminder of the challenges faced by community colleges in general and students on probation in particular. While the Enhanced Opening Doors program may be a good start, a more intensive or longer-lasting initiative may be necessary to help probationary students beyond the short term. With the long-term results of the Opening Doors study at Chaffey now known, administrators, counselors, faculty, and researchers should begin to consider what can be done for probationary students in the future.

Gordon L. Berlin
President

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The long-term follow-up at Chaffey College, presented in this report, was supported by the Institute of Education Sciences, U.S. Department of Education, through Grant #R305A100066-11 to MDRC. The opinions expressed are those of the authors and do not represent the views of the Institute or the U.S. Department of Education. We are very appreciative of the Institute's generous support.

The original work on the Opening Doors demonstration received support from several foundations and government agencies, which are listed at the front of this report. We are grateful for their generous backing and ongoing commitment to the project. We particularly thank The William and Flora Hewlett Foundation and The James Irvine Foundation, which provided special funding to support the Opening Doors programs at Chaffey College.

We are grateful to the many administrators, faculty, and staff at Chaffey who made Opening Doors possible. There is not enough space to mention everyone who has played a role in the programs and the study, but we particularly want to acknowledge Ricardo Diaz, the Opening Doors Coordinator at Chaffey, who has been a terrific partner since the inception of the project. He collaborated with several others at the college to design the program and study, and he provided us with updates on the program's operations after the cohort described in this report had completed Opening Doors.

Several people have been instrumental in providing student transcript and probation data to MDRC over the course of the study. From Chaffey, special thanks are due to Inge Pelzer, currently the Executive Assistant to the President, and Jim Fillpot, the Director of Institutional Research. In addition, from the California Community College Chancellor's Office, we would like to thank Patrick Perry, Vice Chancellor, and Myrna Huffman, Director of Information Systems, for providing transcript data from their database, which helped us tell a richer story.

Many MDRC staff members have contributed to the Opening Doors project and to this report. Katherine Morriss coordinated the report production process, created exhibits, and conducted fact-checking. Caitlin Platania also contributed to the fact-checking of the report. Michael Pih assisted with the programming of the data. The current MDRC staff mentioned, along with Gordon Berlin, Rob Ivry, Sue Scrivener, Herbert Collado, Pei Zhu, and John Hutchins, reviewed earlier drafts of this report and provided helpful comments. Alice Tufel edited the report, and Stephanie Cowell prepared it for publication.

Finally, we would like to thank the students who participated in the study at Chaffey. We hope that the findings from Chaffey will be used to improve college programs and services for these students and others like them in the future.

The Authors

Executive Summary

Community colleges across the United States face a difficult challenge. On the one hand, they are “open access” institutions, with a clear mission to serve students from all backgrounds and at varying levels of college readiness. On the other hand, they must uphold high academic standards in order to maintain accreditation and adequately prepare students for employment or transfer to four-year colleges and universities. How, then, can community colleges best serve students who want to learn but do not meet minimum academic standards?

Chaffey College, a large community college located about 40 miles east of Los Angeles, began to wrestle with this question early in the twenty-first century. At the time, roughly one out of every five students enrolled at Chaffey was on probation for poor academic performance (meaning they had a cumulative grade point average, or GPA, below 2.0) or were making insufficient progress toward a degree (meaning that they failed to complete half or more of the credits they attempted). Under the auspices of a national demonstration project called Opening Doors, Chaffey developed a program that was designed to increase probationary students’ chances of succeeding in college. The program went through two iterations: Opening Doors, which began in fall 2005, and Enhanced Opening Doors,¹ which began the following year. The Enhanced Opening Doors program, which is the subject of this report, comprised three core components:

- **College Success course.** Taught by a college counselor, this “guidance” course, which students in the program were told they had to take, was designed to help probationary students clarify their personal goals, understand college rules and regulations, and develop better study skills. A two-credit lecture course was linked to a one-credit workshop in which students would apply the principles covered in the lecture. The course’s credits counted toward full-time enrollment in the college and were included in students’ GPA, but did not count toward a degree or transfer to a four-year college or university. In addition, a voucher was provided to students in the program to cover the cost of College Success course books. A second-semester College Success course, which was not mandatory, was also offered to students in the program; however, only a minority of students enrolled in the second-semester College Success course.

¹At Chaffey, the second iteration of the program, called “Enhanced Opening Doors” in this report, was called “Opening Doors to Excellence.”

- **Visits to the Success Centers.** As part of the College Success course, students were expected to complete five visits to the college’s “Success Centers,” where all Chaffey students could get extra help in reading, writing, and math. These visits also included assignments for students in the Enhanced Opening Doors program, linked to the College Success course, that covered the following topics: skills assessment, learning styles, time management, use of resources, and test preparation.
- **Improved counseling.** The instructors of the College Success courses were expected to work with students during class time and to meet with them outside of class to provide extra advising and counseling as needed.

In order to determine the effectiveness of Chaffey’s Enhanced Opening Doors program, MDRC — the nonprofit, nonpartisan organization responsible for launching and managing the Opening Doors demonstration — conducted a random assignment evaluation. MDRC randomly assigned 444 students either to a program group that was eligible to participate in the Enhanced Opening Doors program as described above or to a control group whose members could take a College Success course (though very few did), could visit the Success Centers on their own, and could access the college’s standard counseling services. Random assignment ensures that both observed characteristics (for example, race and gender) and unobserved characteristics (for example, tenacity and motivation) are distributed similarly between the two research groups. Consequently, subsequent differences in academic outcomes — known as *impacts* — can be confidently attributed to the program, rather than to preexisting differences between the two research groups.

Early results from the evaluation found that the program led to positive results during the two semesters that students were enrolled in the program (the “program semesters”).² This report extends follow-up on the Chaffey sample to four years after students entered the study to determine whether the Enhanced Opening Doors program continued to help students perform academically, persist in college, and earn college degrees at Chaffey or at other institutions to which they transferred during the study period.

The key findings from this report are:

- **The message matters — optional program activities had lower participation rates compared with required program activities.**

²Susan Scrivener, Colleen Sommo, and Herbert Collado, *Getting Back on Track: Effects of a Community College Program for Probationary Students* (New York: MDRC, 2009).

The original program, which is not the main focus of this report, offered students the chance to participate in the program's College Success course, but did not require that they participate. In this first iteration of the program, only about half the students who were assigned to the program group enrolled in the class, believing that it was optional.

In the Enhanced Opening Doors program, which began in the 2006-2007 academic year, students who were randomly assigned to the program group were informed that participation in the first semester of Enhanced Opening Doors was required, and that they would not be able to register for other classes unless they signed up for the College Success course. Participation in the first-semester College Success course jumped to 72 percent (from 52 percent in the original Opening Doors program). Although college administrators ultimately decided not to enforce the "requirement" for students who did not comply, evidence suggests that the change in message led to a higher rate of compliance, an important lesson from this project that may be applicable more broadly.

- **The short-term effects of Chaffey's Enhanced Opening Doors program were encouraging.**

The Enhanced Opening Doors program was a two-semester intervention, as noted earlier. Students in the program group and control group had significantly different experiences during the first semester of the program. Most program group students took the College Success course, whereas control group students did not, and program group students visited the Success Centers more often than did their control group counterparts. In theory, completing the College Success course and visiting the Success Centers will enable students to perform better academically during the program period and to achieve longer-term success as a result of the skills and study habits they gain through these experiences. During the second semester of the program, in spring 2007, the experiences of program and control group students once again differed, although not nearly as dramatically as they had during the first program semester.

When the two program semesters were complete, students in the program group had earned more credits than students in the control group and were more likely to have had a cumulative GPA of over 2.0. (See Table ES.1.) These positive program effects were partly driven by the College Success course, whose associated credits cannot be applied toward a degree and cannot be transferred to a four-year college or university. When credit accumulation is examined including only degree-applicable credits and credits earned through developmental education classes (which are not applicable toward a degree but count toward enrollment), and the College Success course is excluded, program and control group members were observed to have earned similar numbers of credits during the first two semesters of the study. However, most program group students took at least one semester of the College Success course during the first two program semesters in addition to their regular course load — so the fact that

The Opening Doors Demonstration

Table ES.1

Academic Outcomes at Chaffey College After Two Enhanced Opening Doors Program Semesters

Chaffey College Four-Year Follow-Up Report

Outcome	Program Group	Control Group	Difference (Impact)	Standard Error
Cumulative credits earned	8.4	5.7	2.7 ***	0.7
Cumulative GPA higher than 2.0 ^a (%)	35.7	23.6	12.1 ***	4.3
Cumulative degree-applicable GPA higher than 2.0 ^b (%)	30.3	23.2	7.2 *	4.2
Ever in good academic standing ^c (%)	30.4	15.9	14.5 ***	4.0
Sample size (n = 444)	224	220		

SOURCES: MDRC calculations from Chaffey College transcript and probation data.

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

A two-tailed t-test was applied to differences between research groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

Estimates are adjusted by round of random assignment.

Cumulative measures are based on the two program semesters only.

^aGrades earned in all courses except for developmental courses are used in the calculation of grade point average (GPA). Students who do not have a GPA for this time period are included as zeros.

^bGrades earned only in degree-applicable courses, which exclude the College Success course, are used in the calculations of GPA. Students who do not have a GPA for this time period are included as zeros.

^cSample members who were not enrolled were not considered to be in good academic standing.

program group students did not fall behind control group members on degree-applicable and developmental credits may be viewed as a positive finding. In other words, despite having an additional three-credit class as part of their course load, program group students managed to keep pace with their control group counterparts on their other credits.

In addition, the program had a positive impact on GPA for degree-applicable courses (that is, excluding the College Success course) during the two program semesters, suggesting that the positive program effects were not solely a result of the credits and grades in the College Success course. Finally, compared with their control group counterparts, students in the program group were nearly twice as likely to be in good academic standing at the end of the two-semester follow-up period. In sum, just after the program services were complete, program group students' academic outcomes looked promising.

- **Despite the program’s encouraging short-term effects, it did not meaningfully improve students’ long-term academic outcomes.**

This report presents results up to and including four years after students entered the study — an additional three years beyond the earlier short-term follow-up. At that point, it is expected that any positive short-term effect of the program would have translated into students making more progress toward a degree with respect to degree-applicable credits, which a student must earn in order to graduate, as well as developmental credits, which students are encouraged to complete prior to enrolling in certain degree-applicable courses. As shown in Table ES.2, the evidence from this study does not indicate that the program had significant, positive, long-term effects (compared with Chaffey College’s regular services) with respect to degree-applicable plus developmental credit accumulation, continued enrollment, or attainment of a degree or certificate. In general, students who were offered the opportunity to participate in the Enhanced Opening Doors program had academic outcomes that were similar to those of the students in the control group during the four-year follow-up period. After four years, program group members maintained their edge on total credits earned, but this impact mostly reflects the three-credit College Success course that students took during the first semester of the study, which does not help them move closer to earning a degree or certificate. Strikingly, four years after the study began, only 7 percent of all students in the study had earned a degree or certificate, and 44 percent were still enrolled in school (with 21-22 percent still at Chaffey College).

- **The Chaffey College Enhanced Opening Doors program had a net cost of around \$1,300 per program group member over the course of the two program semesters.**

The net cost of \$1,300 per program group member represents the difference between the gross cost per program group member (\$4,300) and the gross cost per control group member (\$3,000). One way to lower the cost of the program and potentially improve its overall cost-effectiveness would be to make the Enhanced Opening Doors program a one-semester, mandated intervention.

- **When all credits are considered, including the College Success course, the cost per credit earned for the program group was slightly lower than for the control group. However, the cost-effectiveness of earning credits fades away when only degree-applicable and developmental credits are considered.**

Specifically, the cost per credit earned for program group members (\$516 per credit) was 3 percent less expensive than the cost per credit earned for control group members (\$530 per credit). This finding is the result of program group members passing a higher percentage of their attempted credits compared with control members. However, when credits associated with

The Opening Doors Demonstration

Table ES.2

**Primary Academic Outcomes, Enhanced Opening Doors,
Four Years After Random Assignment**

Chaffey College Four-Year Follow-Up Report

Outcome	Program Group	Control Group	Difference (Impact)	Standard Error
Number of semesters enrolled at any college	4.18	4.06	0.12	0.24
Cumulative degree-applicable and developmental credits earned ^{a,b}	18.4	17.1	1.4	1.9
Enrolled at any college in year 4 or earned a degree or certificate (%)	45.5	45.5	0.1	4.7
Enrolled at any college in year 4	44.2	44.1	0.1	4.7
Earned a degree or certificate	7.6	6.4	1.2	2.4
Sample size (n = 444)	224	220		

SOURCES: MDRC calculations from Chaffey College transcript, California Community College Chancellor's Office, and National Student Clearinghouse data.

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

A two-tailed t-test was applied to differences between research groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

Estimates are adjusted by round of random assignment.

Enrollment and credits earned are based on data from fall 2006 through summer 2010. Degree and certificate data are from fall 2006 through spring 2010.

^aIncludes credits earned in courses taken during the first four years of the study and excludes credits from the College Success course. If a student receives a letter grade in a course, this measure only includes credits in which the student earned a "C" or higher. If a student takes a class "pass/fail" or if the class is only offered "pass/fail," then this measure only includes a grade of "pass."

^bAt any public, two-year California college.

the College Success course are excluded and only degree-applicable and developmental credits are considered, the relative cost-effectiveness of the program fades away. Specifically, the cost per degree-applicable and developmental credit earned for the program group (\$797 per credit) was 26 percent more expensive than the cost per degree-applicable and developmental credit earned for the control group (\$635 per credit).

Conclusion

Chaffey College is one of only a small percentage of community colleges in the United States that has been willing to subject one of its programs to a rigorous, random assignment evalua-

tion. Because of the college's commitment to serving its students as well as possible, the staff members at Chaffey were eager to know how effective the Enhanced Opening Doors program was compared with the college's regular services for probationary students. Their willingness to participate in this study should be applauded, as it enables them to better serve their students and provides other college administrators, policymakers, and researchers with trustworthy information and evidence on which to base their decisions. Although there is not strong evidence that the Enhanced Opening Doors program has long-term outcomes that are significantly different from those produced by Chaffey's usual services, there are lessons that the college and policymakers can take away from this study.

For example, the Opening Doors study at Chaffey College began as a study of one program (the Opening Doors program), and that program evolved into a stronger second program (the Enhanced Opening Doors program). A prior MDRC report describes the differences between the two programs and their evolution in detail, but one of the main observations in the programs' development was a change from optional participation in certain program services to telling students that they were required to participate, which seemed to have effects on program participation and short-term program impacts.³ Rates of participation in the College Success course were low in the original program, which led Chaffey administrators to require participation in the College Success course in the Enhanced Opening Doors program, and they told students that their registration would be blocked if they did not comply. This change in policy and messaging was associated with a large increase in program participation. It is sometimes the case that those individuals who are at the greatest risk of failure are also those who are the least likely to participate in programs that are designed to help them succeed. College administrators must weigh their desire to allow their students autonomy and decision-making power against the fact that doing so may reduce participation in the very programs that have been created for their benefit. Clearly, this is a difficult balance to achieve — requiring individuals to participate in a program without their buy-in can backfire, yet allowing complete flexibility, especially when dealing with students who have a low likelihood of success, may not be in the students' best interest.

A final lesson that has been emerging from a number of community college studies is that one- and two-semester interventions may not be sufficient to make a lasting difference.⁴ Students often do better while they receive interventions, but the impacts fade once the interven-

³Susan Scrivener, Colleen Sommo, and Herbert Collado, *Getting Back on Track: Effects of a Community College Program for Probationary Students* (New York: MDRC, 2009).

⁴See, for example, Susan Scrivener and Michael Weiss, *More Guidance, Better Results? Three-Year Effects of an Enhanced Student Services Program at Two Community Colleges* (New York: MDRC, 2009); Evan Weissman, Kristin F. Butcher, Emily Schneider, Jedediah Teres, Herbert Collado, and David Greenberg, *Learning Communities for Students in Developmental Math: Impact Studies at Queensborough and Houston Community Colleges* (New York: MDRC, 2011).

tions end. While it is not realistic — and probably not advisable — for interventions to last indefinitely, program operators might consider whether they can do more to help students make a smooth transition to regular college services once an intervention like Enhanced Opening Doors ends. For example, program operators might place greater emphasis on mapping out what courses students should take once the intervention ends and conducting periodic follow-up to make sure that students remain on track and have not encountered new barriers to success. Some experts have suggested that community colleges need to institute better policies and create clearer pathways that will help *all* students complete the requirements for earning a certificate or degree as quickly as possible.⁵ Some promising new initiatives, such as the City University of New York’s Accelerated Study in Associate Programs (ASAP)⁶ and the Bill & Melinda Gates Foundation’s Completion by Design Initiative,⁷ are aspiring to do just that, and may soon offer lessons on how it might be achieved.

⁵See, for example, Davis Jenkins, “Get with the Program: Accelerating Community College Students’ Entry into and Completion of Programs of Study,” CCRC Working Work Paper No. 32 (New York: Community College Research Center, Teacher’s College, Columbia University, 2011); Postsecondary Success Team, *Completion by Design Concept Paper* (Seattle: Bill & Melinda Gates Foundation, 2010).

⁶See www.cuny.edu/academics/programs/notable/asap/about.html.

⁷See www.completionbydesign.org.

Chapter 1

Introduction

“Today’s probationary student is tomorrow’s transfer student.”
— *Chaffey College Administrator*

Community colleges across the United States face a difficult challenge. On the one hand, they are “open access” institutions, with a clear mission to serve students from all backgrounds and at varying levels of college readiness. On the other hand, they must uphold high academic standards in order to maintain accreditation and adequately prepare students for employment or transfer to four-year colleges and universities. How, then, can community colleges best serve students who want to learn but do not meet minimum academic standards?

Chaffey College, a large community college located about 40 miles east of Los Angeles, began to wrestle with this question early in the twenty-first century. At the time, roughly one out of every five students enrolled at Chaffey was on probation for poor academic performance (meaning that they had a cumulative grade point average, or GPA, below 2.0) or because they were making insufficient progress toward a degree (meaning that they had failed to complete 50 percent or more of the credits they had attempted). Under the auspices of a national demonstration project called Opening Doors, Chaffey developed a “College Success” course that taught probationary students how to set goals, manage time, and master other skills believed to be important for academic success. The course also sent students to campus “Success Centers” where they received help in improving their reading, writing, or math skills. An evaluation by MDRC — the organization responsible for launching and managing the Opening Doors demonstration — found that the program yielded positive results. Specifically, after two semesters, students who had been assigned to participate in the program were nearly twice as likely to be off probation as students who had not been assigned to the program and did not take the College Success course. Students who were assigned to the program also earned more course credits and had a higher grade point average than students who were not in the program.

MDRC’s first report on the Opening Doors program at Chaffey College, which appeared in 2009, followed up students in the study sample for two semesters after they entered the study, and found some promising early results.¹ This report extends follow-up on the Chaffey sample for four years after students entered the study to determine whether the program continued to help students perform satisfactorily, persist in college, and earn college degrees at Chaffey or other institutions. The results indicate that the early gains were generally short-lived.

¹Scrivener, Sommo, and Collado (2009).

After four years, students in the program were no more likely to be enrolled in college or to have earned a college degree than students who were not in the program. Students in the Opening Doors program maintained a small lead in the number of credits earned, but this was driven mostly by their completion of the College Success course, which did not count toward a degree and was not transferrable to four-year colleges and universities.

The remainder of this chapter provides more detail on the Opening Doors demonstration and the Chaffey program. This is followed by a brief discussion of the higher education system in California and what research has revealed about persistence and degree completion among community college students in the state and across the nation. It concludes with a summary of how the rest of the report is organized.

The Opening Doors Demonstration

As noted above, Chaffey College's program for probationary students was part of a national demonstration project known as Opening Doors. MDRC launched the demonstration in response to two pressing problems: low rates of persistence among community college students and a dearth of reliable evidence about effective strategies to improve student retention and academic success.² After meeting with community college experts and students from around the country, MDRC identified three broad strategies expected to produce better student outcomes: (1) changes in curriculum or instruction that would help students master the basic skills needed to succeed in college; (2) increased financial aid that would give students an incentive to succeed and help them cover expenses; and (3) enhancements to academic counseling and other student services that would help students understand the "rules of the game" and remove barriers to success. MDRC then looked for states and community colleges that had promising program models or ideas that were consistent with one or more of these strategies, and that were interested in participating in a rigorous, random assignment evaluation.

Four distinct programs were selected for the demonstration:

- In a *learning communities* program at Kingsborough Community College in New York, incoming freshmen were placed into small groups and took all or most of their first-semester courses together. The learning communities featured an English course (usually at a developmental, or remedial, level), a College Success course, and a standard college course like introductory psychology that were connected by a common theme and integrated course assignments.

²For an early history of the Opening Doors demonstration, see Brock and LeBlanc (2005).

- A *performance-based scholarship* at Delgado Community College and the Louisiana Technical College-West Jefferson (both in the New Orleans area) provided a generous financial incentive to low-income parents if they stayed enrolled at least half time and maintained a “C” or better average.
- In an *enhanced student services* program at Lorain County Community College and Owens Community College in Ohio, new and continuing students were assigned to academic counselors who had much lower-than-average caseloads and who worked as a team to deliver student services. Students received a modest stipend for completing at least two counselor visits per semester.
- A *College Success course* that required students to get extra help in basic reading, writing, or math skills at Chaffey College in California targeted students who were on probation.

Random assignment — long considered the “gold standard” for evaluations of welfare reform, health care, and other kinds of interventions — had rarely been done in community colleges before the Opening Doors demonstration. Students who met the colleges’ program eligibility criteria went through a process similar to a coin toss. At each college, about half the eligible students were assigned to a program group that received the intervention described for it above; the remaining students were assigned to a control group, which represented “business as usual” at the college — that is, what would be provided to students if the Opening Doors program did not exist. The strength of a such a design is that it ensures that the characteristics of students in the program and control groups are virtually identical at the beginning of the study, including characteristics that are easy to measure (for example, gender and prior educational history), as well as those that are more difficult to capture (such as motivation and tenacity). By tracking the program and control groups over time and comparing their outcomes, researchers can determine the *impact* of the program over and above regular college services — estimated as the difference between the outcomes in the program and control groups.

MDRC released a series of reports on the effectiveness of the Opening Doors programs between 2006 and 2009. Most of these reports followed students for one or two years after random assignment, though the report on the enhanced student services program in Ohio tracked students for three years.³ All the programs produced at least some positive impacts on credits earned or other measures. The largest effects were observed in the performance-based scholarship program in Louisiana, but the devastation caused by Hurricane Katrina in 2005 led

³For an overview of Opening Doors findings, see Scrivener and Coghlan (2011). Full reports on individual Opening Doors programs are available at http://www.mdrc.org/project_31_2.html.

to temporary closure of the colleges in the study and complicated efforts to do longer-term follow-up on this sample.⁴

In 2010, MDRC received a grant from the U.S. Department of Education's Institute of Education Sciences to conduct longer-term follow-up on students in the learning communities program at Kingsborough and the College Success course at Chaffey. These programs were singled out because of their initial positive results and because most of the students in the sample were relatively young (age 21 years or younger at the time of random assignment), which suggested that they were just beginning their postsecondary careers and would be good candidates for long-term follow-up. The primary research question was the same for both programs: would they help more students stay in school and earn degrees over the long run? As noted, this report tracks students in the Chaffey College sample for four years; MDRC will release a six-year follow-up study on the Kingsborough sample in 2012.

Chaffey College and Opening Doors

Chaffey College, one of the oldest community colleges in California, serves a region that has experienced enormous population growth and demographic change since the Second World War. In fall 2006, it enrolled nearly 18,000 students at its three campuses in Rancho Cucamonga, Chino, and Fontana⁵ — all part of the vast “Inland Empire” that forms the nexus of Los Angeles, Riverside, and San Bernardino counties. The region is ethnically diverse, with a large and growing Hispanic population.⁶ Over 40 percent of Chaffey's student population is Hispanic,⁷ which designates it as an Hispanic Serving Institution eligible for Title V funding from the U.S. Department of Education.

Chaffey College had a reputation for innovation long before Opening Doors. In 2000, the college launched the Basic Skills Transformation Project, which led to the creation of three “Success Centers” to help students improve their reading, writing, and math skills. The Success Centers are analogous to campus tutoring centers but offer much more than the average tutoring center. Led by full-time faculty, the Success Centers offer workshops and instruction to students on a variety of subjects, along with curriculum resources and instructional supports for faculty.

⁴See Richburg-Hayes et al. (2009). MDRC is coordinating with a team of researchers led by Christina Paxson at Princeton University on a long-term follow-up study of Opening Doors sample members in Louisiana who were affected by Hurricane Katrina. The study is focused on identifying how pre-hurricane resources and capacities — including mental and physical health, social networks, and economic resources — affect ability to adjust to a major life trauma. The study is funded by the National Institutes of Health (grant # R01HD046162).

⁵See <http://nces.ed.gov/ipeds/datacenter/CDS.aspx>.

⁶Johnson, Reed, and Hayes (2008).

⁷See <http://nces.ed.gov/ipeds/datacenter/CDS.aspx>.

Students can use the Success Centers on a drop-in basis or by appointment seven days a week, including early morning and evening hours on weekdays. The Centers are literally campus hubs, with hundreds of students coming through each day to study, use computers, attend workshops, and get help with homework.

The Success Centers' positive reputation led MDRC to approach Chaffey about the possibility of joining the Opening Doors demonstration. After some initial discussion, MDRC and Chaffey officials quickly determined that the Success Centers were not suited to a random assignment evaluation, since they were already embedded into campus life and were available to all students. Chaffey officials were intrigued, however, by the larger programmatic and research goals of the Opening Doors demonstration, and brought up the idea of developing an intervention that targeted students on probation. The college was alarmed by the sheer number of students in this category — approximately 3,500 when talks with MDRC began — and was committed to reducing this figure. The college also recognized that its current policy of sending students on probation a warning letter rarely changed students' behavior or helped them improve. Rather than adopt a tougher stance, the college wanted to determine whether it could better utilize its Success Centers and counseling staff to help probationary students return to good standing and make progress toward a degree.⁸

The creation of Chaffey's Opening Doors program followed a series of meetings and retreats involving college administrators, institutional researchers, English and math faculty, Success Center coordinators, academic counselors, and financial aid staff at the college, along with representatives from MDRC. The earliest discussions centered on understanding the needs and characteristics of the probationary students. Relying heavily on data from the college's Institutional Research office, what emerged was a picture of students who often had undefined goals, took too many classes or the wrong type of classes, did not understand college policies, and had poor study habits. The college's Institutional Research office also reported data showing that probationary students were much less likely to frequent the Success Centers than higher-performing students. In response, the planning group devised an Opening Doors program that comprised three components:

- **College Success course.** Taught by a college counselor, this one-semester “guidance” course was designed to help probationary students clarify their personal goals, understand college rules and regulations, and develop better study skills. A two-credit lecture course was linked to a one-credit workshop in which students would apply the principles covered in the lecture. The course's credits counted toward full-time enrollment in the college and were included in students' grade point averages, but did not count toward a degree

⁸For a complete discussion of the program history, see Scrivener, Sommo, and Collado (2009).

or transfer to a four-year institution. In addition, a voucher was provided to students in the program to cover the cost of College Success course books.

- **Visits to the Success Centers.** As part of the College Success course, students were expected to complete nine visits to the college's Success Centers. These visits included assignments that were linked to the College Success course and covered skills assessment, learning styles, time management, use of resources, and test preparation.
- **Improved counseling.** The instructor of the College Success course worked with students during class time and met with them outside of class as needed.

Chaffey's Opening Doors program went through two iterations.⁹ The original program began with a small, 50-student pilot in spring 2005, and then proceeded to a full random assignment evaluation in fall 2005. Given the large number of students on probation, Chaffey had no difficulty recruiting nearly 900 students to participate. MDRC randomly assigned the students into a program group that was offered the services outlined above, or to a control group that was not allowed to participate in Opening Doors but could take advantage of other services on campus, including visiting the Success Centers and making appointments to see counselors.¹⁰ MDRC tracked both the program and control groups over four semesters and compared their enrollment status, grades, probationary status, and other outcomes.

Soon after the fall 2005 semester ended — and before the impact results were available — Chaffey administrators, faculty, and staff got back together with MDRC to talk about how the program went and to consider possible improvements. At least three key critical implementation problems were identified. First and most important, roughly half the students who were assigned to the program group did not enroll in the College Success course, believing it to be optional. Second, many of the counselors who taught the College Success course were unsure about their roles, especially with regard to meeting with students outside of class. Third, the nine visits to the Success Centers were not well integrated into the College Success course, and struck some counselors and students as excessive. Perhaps owing to all these factors, MDRC's impact evaluation ultimately found that the original Opening Doors program did not produce any added value, or *impact*, above and beyond the regular college services offered to the control group.

The second iteration of the program, which became known as Enhanced Opening Doors — to convey a level of service that goes beyond the services offered through the original

⁹For a complete discussion of the two iterations of Chaffey's Opening Doors program and early program impacts, see Scrivener, Sommo, and Collado (2009).

¹⁰Some College Success courses were offered outside of the Opening Doors program in which control group students could enroll, but this happened only rarely.

Opening Doors program — began in the 2006-2007 academic year.¹¹ The most important change was that students who were randomly assigned to the program group were informed that participation was required, and that they would not be able to register for other classes unless they signed up for the College Success course. The content of the College Success course stayed about the same, but a second semester was added as an option for students who wanted or needed additional support. The counselors who taught the College Success course were more experienced than those in the original program and received clearer instructions about the importance of meeting with students outside of class. The counselors also worked with faculty in the Success Centers to develop more meaningful projects and assignments for students to improve their reading, writing, or math skills, and reduced the number of required visits to the Success Centers from nine to five. In the opinion of Chaffey College and MDRC staff, the Enhanced Opening Doors program operated much more smoothly than the original model and provided a sharp contrast to the college’s regular services and procedures for students on probation. (See Table 1.1.)

Chaffey and MDRC staff felt that the revisions to the program were substantial enough to warrant another round of evaluation. Nearly 450 probationary students were recruited for and randomly assigned to Enhanced Opening Doors or the control group in fall 2006. The program group’s participation in the College Success course was vastly improved over the original model: nearly three-fourths (about 72 percent) of students participated in the first-semester College Success course, compared with 52 percent in the original program, and roughly one-third enrolled in the second-semester class. As shown in Table 1.2, the results were encouraging. At the end of the two semesters during which the program ran (the “program semesters”), students in the program group earned significantly more credits and were more likely to have a cumulative GPA higher than 2.0 compared with students in the control group.¹² These effects were largely driven by the College Success course, though the study found that the program also had a positive impact on GPA for degree-applicable courses. Finally, students in the program group were nearly twice as likely to be in good academic standing at the end of the two-semester follow-up period than students in the control group.

Expectations for Long-Term Follow-Up

As noted earlier, Chaffey College staff designed Opening Doors with the goal of reducing the number of students on probation and helping students get onto a path where they would eventu-

¹¹At Chaffey, the second iteration of the program, called “Enhanced Opening Doors” in this report, was called “Opening Doors to Excellence.”

¹²In the original MDRC report, *Getting Back on Track* (Scrivener, Sommo, and Collado, 2009), GPA categories were labeled as 0-1.9 and 2.0 or higher. The correct labels are 0-2.0 and greater than 2.0. Labels are corrected in this report.

The Opening Doors Demonstration

Table 1.1

Features of Enhanced Opening Doors and Regular College Services

Chaffey College Four-Year Follow-Up Report

Feature	Enhanced Opening Doors Program	Regular College Services
Participation requirements	Students were told that participation in the first-semester College Success course was required.	No participation requirements.
First-semester College Success course	2-credit lecture linked with 1-credit workshop designed to help probationary students develop skills needed for academic success; taught by experienced staff; almost three-fourths of program group took course; students expected to visit Success Centers.	Students could take College Success course; very few control group members did so.
Second-semester College Success course	2-credit course designed to build upon first-semester course; all students who took first-semester course invited to participate; roughly one-third of program group took course; no expectation to visit Success Centers.	Students could take College Success course; very few control group members did so.
Success Centers	Students in first-semester College Success course expected to visit centers 5 times; students chose which center(s) to visit; content of assignments integrated and timed with course material.	Students could visit centers on their own; students in some developmental classes were required to do so; some control group members did so.
Counseling	Students in College Success courses received help from counselor in class, and many met with counselor outside of class; counselors generally worked proactively to identify and resolve issues.	Students could access counseling on their own; caseload for counselors was roughly 1,500:1; counseling role was reactive.

SOURCE: MDRC field research data.

ally graduate from Chaffey or transfer to another college or university. The transfer goal is especially salient in California, where the Master Plan for Higher Education divides the state's three public postsecondary education systems into three segments: the University of California (UC), which admits students who graduate in the top one-eighth of their high school graduating class; the California State Universities (CSUs), which admit students in the top one-third of

The Opening Doors Demonstration

Table 1.2

Academic Outcomes at Chaffey College After Two Enhanced Opening Doors Program Semesters

Chaffey College Four-Year Follow-Up Report

Outcome	Program Group	Control Group	Difference (Impact)	Standard Error
Cumulative credits earned	8.4	5.7	2.7 ***	0.7
Cumulative GPA higher than 2.0 ^a (%)	35.7	23.6	12.1 ***	4.3
Cumulative degree-applicable GPA higher than 2.0 ^b (%)	30.3	23.2	7.2 *	4.2
Ever in good academic standing ^c (%)	30.4	15.9	14.5 ***	4.0
Sample size (n = 444)	224	220		

SOURCES: MDRC calculations from Chaffey College transcript and probation data.

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

A two-tailed t-test was applied to differences between research groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

Estimates are adjusted by round of random assignment.

Cumulative measures are based on the two program semesters only.

^aGrades earned in all courses except for developmental courses are used in the calculation of grade point average (GPA). Students who do not have a GPA for this time period are included as zeros.

^bGrades earned only in degree-applicable courses, which exclude the College Success course, are used in the calculations of GPA. Students who do not have a GPA for this time period are included as zeros.

^cSample members who were not enrolled were not considered to be in good academic standing.

their high school graduating class; and the community colleges, which admit all others.¹³ Because community colleges are less expensive and often closer to home than the UC schools or CSUs, many students who could qualify for the state's four-year universities choose to attend community college first and later transfer. State budget cutbacks have also forced some university-eligible students to begin at community college because of space limitations. The UC schools and CSUs do not generally admit transfer students at the freshman or sophomore level, so community college students intending to transfer must complete a curriculum that includes 60 transferable credits (about two years of full-time study) and at least one course in math and one in English. It is not necessary to earn an associate's degree to transfer.¹⁴

¹³California State Department of Education (1960).

¹⁴Moore and Shulock (2010).

While the Master Plan suggests that community colleges offer a clear pathway to the state universities, recent research on community college completion and transfer rates indicate that relatively few students earn any type of credential or transfer to a four-year school. Six years after beginning at a community college in California, only 11 percent of degree-seeking students earn an associate's degree, and another 5 percent earn an occupational certificate. Fifteen percent of degree-seeking students complete a transfer curriculum as defined by UC and CSU, and 23 percent transfer to either a state public university or a private institution.¹⁵ These figures are derived from state community college system, UC, and CSU databases and matched with data from the National Student Clearinghouse.¹⁶ National surveys of entering community college students offer a picture that is only slightly better than the California data. Across the United States, 15 percent of degree-seeking community college students obtained an associate's degree, and 6 percent earned a certificate from that institution within six years after beginning at a community college. An additional 32 percent had transferred to another public or private institution.¹⁷

These figures suggest that for students in the Chaffey study, academic success — as defined by degree completion and transfer — is more likely to be the exception than the rule. Unlike the state and national data cited above, the Chaffey sample is limited to students who were on probation at the time they entered the study, making them a particularly at-risk group. The follow-up period for this report is also four years rather than six, though all the students in the Chaffey sample had been enrolled in college for at least one year prior to random assignment. Chaffey and MDRC anticipated that Enhanced Opening Doors would equip at least some probationary students with the knowledge and skills they needed to help them recover from past challenges and go on to earn college degrees. As later chapters reveal, the analysis indicates that very few students attained this goal.

Organization of This Report

The subsequent chapters examine the educational trajectories of Chaffey students who were randomly assigned to the Enhanced Opening Doors program or a control group in fall 2006. Chapter 2 describes the study sample and data sources used to track students' progress. Chapter 3 reviews the participation data for the fall 2006 program and describes the program's impacts during the program year and the year subsequent to the program. Chapter 4 takes the long-term view, covering impacts on various educational measures over four years. Chapter 5 presents information on program costs, and Chapter 6 gives an overall summary and outlines implications for policymakers and community college practitioners.

¹⁵Moore and Shulock (2010).

¹⁶See Chapter 2 for more information on these databases.

¹⁷Radford, Berkner, Wheelless, and Shepherd (2010).

Chapter 2

Data Sources and Sample Description

As discussed in Chapter 1, the evaluation at Chaffey College uses a random assignment design to estimate the effects of the Enhanced Opening Doors program compared with Chaffey's regular classes and services offered to probationary students. This chapter describes how students became part of the research sample and presents some characteristics of the sample members. It also includes key information about the data sources used in this report.

Identifying, Recruiting, and Randomly Assigning Students

Chaffey targeted the Enhanced Opening Doors program to students who met the following eligibility criteria:

- Were on academic or progress probation (see below)
- Had earned fewer than 35 credits toward a degree or credential
- Did not have an associate's degree (or higher) from an accredited college or university
- Had a high school diploma or General Educational Development (GED) certificate
- Were between 18 and 34 years of age

Students at Chaffey are placed on *academic* probation if they have attempted at least 12 credits (since starting college) and have a cumulative grade point average (GPA) below 2.0 ("C"). Students are placed on *progress* probation if they have attempted at least 12 credits and have not completed at least half of the credits they attempted. The Enhanced Opening Doors program targeted students on either type of probation.

Chaffey identified individuals who were eligible for the study using the college's student database. The college sent letters to eligible students notifying them of their probationary status and communicating the college's desire to help them succeed academically. The letter stated, "Failure to improve your academic status may subject you to dismissal from Chaffey College." The letter informed students that they were required to attend one of the probation orientation sessions that were offered and that if they did not attend a session before their registration date, they would not be able to register for classes. College staff made follow-up phone calls to students who did not show up for an orientation session, reiterating this message.

At the orientation sessions, Chaffey staff explained the purpose of the study and what students needed to do to improve their academic standing. If students agreed to participate in the study, staff obtained their written consent and collected baseline information (discussed below). Staff transmitted students' information to MDRC over a secure Web site, received students' research group designation from MDRC (that is, whether they were assigned to the program or control group), and informed the students of their research group.

The students who were assigned to the program group were scheduled to meet with a program counselor. Staff told program group students that they were required to register for the College Success course or they would not be permitted to register for any other courses. After sample intake ended, Chaffey decided not to block students' registration if they did not register for the College Success course because of concern about enrollment rates at the college. However, program group students reported that they believed that they were required to take the course.

After random assignment, the students in the control group attended a brief workshop, during which they were told in more detail what they needed to do to improve their academic standing (for example, work to get their GPA up to a 2.0 or better). There they were also encouraged to schedule an appointment with a college counselor. Control group members were then able to seek services on their own.

Between March and August 2006, 444 students were randomly assigned, with 224 assigned to the program group and 220 assigned to the control group. The college recruited the fall 2006 cohort of students in two different rounds. The first round targeted students who were on probation at the end of fall 2005, and the second round targeted students who were on probation at the end of spring 2006. The college identified students who met all the study eligibility criteria and seemed likely to still be on probation when the intervention began.¹

Characteristics of the Sample

Table 2.1 shows some characteristics of the Enhanced Opening Doors sample members at Chaffey based on the Baseline Information Form (BIF), a questionnaire they completed just before they were randomly assigned. In addition, the table includes some measures of prior academic progress at Chaffey, based on Chaffey transcript data. The table shows the characteristics for the full sample — that is, the program group and control group combined.

¹For a more detailed description of the recruitment and intake process, see Scrivener, Sommo, and Collado (2009).

The Opening Doors Demonstration

Table 2.1

**Selected Characteristics of Sample Members at Baseline,
Enhanced Opening Doors**

Chaffey College Four-Year Follow-Up Report

Characteristic	Full Sample
Gender (%)	
Male	38.3
Female	61.7
Age in years (%)	
18-20	60.6
21-25	29.5
26-30	5.6
31-34	4.3
Marital status (%)	
Married	5.8
Unmarried	94.2
Race/ethnicity ^a (%)	
Hispanic/Latino	54.2
Black, non-Hispanic	12.2
White, non-Hispanic	21.8
Asian or Pacific Islander	6.0
Other	5.8
Has one child or more (%)	10.8
Household receiving any government benefits ^b (%)	12.1
Financially dependent on parents (%)	51.3
Ever employed (%)	92.6
Currently employed (%)	74.6
Diplomas/degrees earned ^c (%)	
High school diploma	95.7
General Educational Development (GED) certificate	3.6
Occupational/technical certificate	6.3
Date of high school graduation/GED certificate receipt (%)	
During the past year	32.2
Between 1 and 5 years ago	50.9
More than 5 years ago	17.0

(continued)

Table 2.1 (continued)

Characteristic	Full Sample
Main reason for enrolling in college (%)	
To complete a certificate program	5.8
To obtain an associate's degree	24.8
To transfer to a 4-year college/university	62.9
To obtain/update job skills	2.7
Other	3.9
First person in family to attend college (%)	30.8
Working personal computer in home (%)	90.3
Owns or has access to a working car (%)	88.9
Language other than English spoken regularly in home (%)	35.6
U.S. citizen (%)	93.0
Respondent born outside U.S. ^d (%)	11.0
Respondent or respondent's parent(s) born outside U.S. ^d (%)	50.3
<u>Prior academic progress at Chaffey College^e</u>	
Number of semesters enrolled	3.56
Number of credits earned	13.5
Cumulative GPA	1.4
On probation (%)	98.9
One semester on probation	48.4
Two semesters or more on probation	50.5
Sample size	444

SOURCES: MDRC calculations using Baseline Information Form (BIF) and Chaffey College transcript and probation data.

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

^aRespondents who said they are Hispanic/Latino and chose a race are included only in the Hispanic/Latino category. Respondents who are not Hispanic/Latino and chose more than one race are considered multiracial. "Other" includes American Indian/Alaskan Native, multiracial, and other.

^bBenefits include Unemployment/Dislocated Worker benefits, Supplemental Security Income (SSI) or disability, cash assistance or welfare, food stamps, and Section 8 or public housing.

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

^d"U.S." includes Puerto Rico.

^eAs of the start of the program. Includes information from Chaffey from fall 1999 through summer 2006.

About 62 percent of the sample members are women. The large majority were 25 years of age or younger (90.1 percent), and most were 20 years of age or younger (60.6 percent) at the time of random assignment. Just over half of the sample identified themselves as Hispanic/Latino. About one in five identified themselves as white (non-Hispanic), and one in eight reported their race as black (non-Hispanic). Nearly all were unmarried (94.2 percent) and very few had children (10.8 percent). Three-fourths of the sample were employed at the time of study intake and about half said they were financially dependent on their parents.

Nearly all sample members had previously earned a high school diploma (95.7 percent). When asked what the main reason for enrolling in Chaffey College was, close to two-thirds said to transfer to a four-year college or university (62.9 percent). Less than a third reported being the first in their family to attend college.

As mentioned earlier, this program was targeted to students who were on probation. That means that these students had previously been enrolled at Chaffey and had experienced substantial academic difficulties. Prior to the start of the program, sample members had been enrolled at Chaffey for an average of 3.56 semesters, earned an average of 13.5 credits, and had an average cumulative GPA of 1.4. Virtually all sample members were still on probation as of the start of the program semester, and about half had been on probation for two or more semesters.

Appendix Table A.1 shows the same characteristics as those presented in Table 2.1 for the full Enhanced Opening Doors sample, the program group, and the control group. One or more asterisks in the rightmost column of the table indicates that the difference between the proportion of program and control group members with that characteristic is statistically significant — that is, it most likely did not arise by chance. There were very few statistically significant differences in baseline characteristics between the groups.²

Table 2.2 compares the research sample, nearly all of whose members were on probation when they entered the study (that is, at the time of random assignment), with the degree-seeking student body at Chaffey on a few demographic characteristics.³ The sample members reflect the gender make-up of the campus. The research participants are younger, however, than the overall student body. Close to half of the research sample was younger than 20 years of age compared with less than a third of the Chaffey student body. Both the student body and the

²In addition, an omnibus test was conducted to assess whether overall systematic differences in baseline characteristics were observed between the two research groups. The model's likelihood ratio yielded a p-value of 0.38. Convention suggests that this probability of differences occurring by chance is large enough that these differences can be ignored in the analysis.

³Due to data limitations, the statistics on age for the Chaffey student body are based on the entire fall 2006 student body, not just degree-seeking students.

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Table 2.2

**Selected Characteristics of Chaffey College Student Body and
Enhanced Opening Doors Study Sample**

Chaffey College Four-Year Follow-Up Report

Characteristic (%)	Chaffey Student Body	Study Sample
Gender		
Male	39.1	38.3
Female	60.9	61.7
Age in years ^a		
Less than 20	30.3	45.7
20-24	34.4	41.7
25 and older	35.3	12.6
Race/ethnicity		
Hispanic	42.6	54.2
Black, non-Hispanic	12.9	12.2
White, non-Hispanic	27.6	21.8
Asian or Pacific Islander	8.1	6.0
Other ^b	8.9	5.8
Sample size	11,811	444

SOURCES: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), and MDRC calculations using Baseline Information Form (BIF) data.

NOTES: IPEDS data on undergraduate degree-seeking students from fall 2006.

Rounding may cause slight discrepancies in sums and differences.

^aData on age are based on the entire undergraduate student population.

^bRace/ethnicity categories available in the IPEDS data include Hispanic, non-Hispanic white, non-Hispanic black, Native American or Alaskan Native, Asian or Pacific Islander, and unknown race or nonresident alien. An “Other” category was created that combined the unknown race, Native American or Alaskan Native, and nonresident alien categories for IPEDS data. The “Other” category in the BIF data includes students who marked “Other race,” Native American or Alaskan Native, or more than one race on the BIF.

research sample were diverse, but the research sample included a higher proportion of Hispanic students. The research sample, which consisted of students on probation who met other program eligibility criteria, should not be considered representative of the broader Chaffey student body.

Data Sources

To study the Enhanced Opening Doors program, the analyses presented in this report rely on several data sources, described below. All data sources were provided for both the program and control groups.⁴

Baseline Data

As mentioned above, just before students were randomly assigned to the study groups, they completed a questionnaire called the Baseline Information Form, which collected demographic and other background information. Baseline data are used in this report to describe the sample.

Chaffey College School Records Data

Chaffey provided MDRC with transcript, probation, and Success Center participation data. These data are specific to Chaffey College and do not capture what sample members may have been doing at other colleges or universities. Each of these is discussed in more detail below.

Transcript data include various academic outcomes for courses taken at Chaffey, such as courses for which students registered, number of credits earned, and course grades. They also include degrees and certificates earned at Chaffey. The analyses for this report include data through the spring 2010 semester, which represents four years of follow-up (the year in which the program ran, or the “program year,” plus three “postprogram years”).

Probation data include the sample members’ probation status as of the end of a semester, and are used to determine whether they are on probation in a given semester. This report presents probation data through the spring 2008 semester, which is two years of follow-up (the program year, plus one postprogram year).⁵ In addition, these data are used to describe the sample members’ probation status at the start of the program.

⁴For a more detailed description of how these data sources were used to create measures, see Appendix B.

⁵In this report, probationary status is not tracked beyond two years for several reasons. First, only students who are currently enrolled are considered eligible to be in good academic standing. Since only 37 percent of all students in the research sample enrolled at Chaffey during the fourth semester of the study, probationary status
(continued)

Success Center participation data include the incidence of students' visits to the centers. Students using these services sign in and out with a computerized swipe-card. The Success Center data are presented for two years following the start of the program (that is, the program year plus one postprogram year).

Chaffey College Financial Data

To determine the cost of operating the Enhanced Opening Doors program, Chaffey provided MDRC with budget data for the program. Chaffey worked with MDRC to clarify descriptions of spending to ensure that all financial data were presented accurately. To estimate the control group cost, the Chaffey operating budget for fiscal year 2006-2007 was pulled from the college's Web site. The cost-effectiveness study is presented in Chapter 5.

National Student Clearinghouse Data

The National Student Clearinghouse, a nonprofit organization, collects and distributes enrollment, degree, and certificate data from more than 3,000 colleges that enroll more than 90 percent of the nation's college students.⁶ The Clearinghouse data are used to provide information about students in the study who may have attended a postsecondary institution other than Chaffey.

California Community College Chancellor's Office Data

The California Community College Chancellor's Office (CCCCO) collects student-level data from the California Community College system, which comprises 72 districts and 112 colleges, and enrolls more than 2.9 million students. CCCCCO provided academic data to MDRC from all participating schools that a sample member attended. These data cast a wider net than the Chaffey transcript data, as they capture the academic progress of sample members in the California Community College system. However, they do not capture academic gains made outside of the system, such as at four-year public or private institutions, or schools outside of California.

becomes highly correlated with enrollment status as time passes. Enrollment status is tracked for the entirety of the follow-up period. Second, probation data are only available at Chaffey, so as more students attend or transfer to other institutions, this measure becomes less meaningful.

⁶See www.studentclearinghouse.org.

In addition, the CCCCCO's Data Mart Tool (available on its Web site) was used to pull information on the number of full-time equivalent (FTE) students for the 2006-2007 academic year at Chaffey College for the cost-effectiveness study.⁷

Field Research

During the operation of the Enhanced Opening Doors program, MDRC staff visited Chaffey to conduct field research and interviewed many college administrators and staff involved with the program. The interviews provided information about the operation of the program and about the key differences between the program and the standard college courses and services available to the members of the study's control group. MDRC staff also conducted a small number of individual student interviews and group discussions.

⁷FTE is a measurement used to standardize student workload so that all students are comparable, even though they may study a different number of hours per semester (or in a given time period). One FTE, for example, is equal to one student enrolled full-time for one academic year.

Chapter 3

Program Participation and Short-Term Impacts

This chapter begins by describing the participation in and use of the Enhanced Opening Doors program services by the fall 2006 cohort of students at Chaffey College. Participation in the College Success course and visits to the Success Centers are described during the academic year in which students were eligible to participate in the program (fall 2006 and spring 2007) as well as during two postprogram semesters (fall 2007 and spring 2008). Program services usage focuses on enrollment in the College Success course and visits to the Success Centers — the two key features of Chaffey’s Enhanced Opening Doors program. The program theory posits that higher rates of enrollment in the College Success course combined with increased Success Center usage will lead to increased academic success. In order to document whether the program induced increased use of Chaffey’s services for students on probation, enrollment in the College Success course and visits to the Success Centers are reported here for both the program group and the control group. It is the differences in experiences between the two groups that are likely to have brought about any observed changes in — or *impacts* on — academic outcomes.

Following a description of program participation, the chapter focuses on the impact of the sample members’ different experiences on various measures of academic progress. The chapter summarizes the highlights from an earlier MDRC report,¹ which focused on the program’s effectiveness during the two semesters in which the program operated.² In addition to presenting the effects during the two program semesters, the chapter includes new evidence of the program’s cumulative effects after two postprogram semesters.³ Since so few students enrolled during the summer, the summer semesters are included in the spring semester results. Figure 3.1 maps the time period described in this chapter, with black arrows representing the program semesters. Following this chapter, Chapter 4 presents the long-term (four years after students entered the study) impact of the Enhanced Opening Doors program on a selected set of outcomes.

¹Scrivener, Sommo, and Collado (2009).

²Unlike in the original report and Chapter 1 of this report, these results now include the summer semester as well.

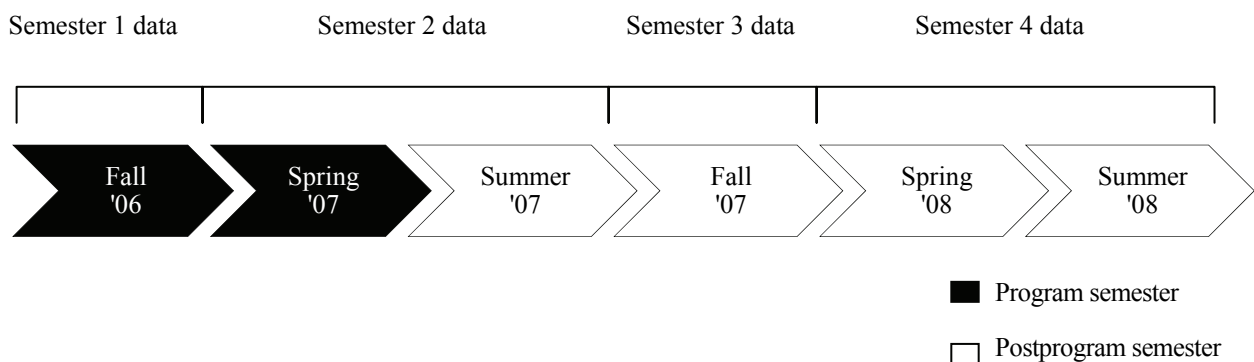
³The summer term is included in the cumulative results.

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Figure 3.1

Data Collection Timeline, First Four Semesters of Enhanced Opening Doors Study

Chaffey College Four-Year Follow-Up Report



NOTE: Data for semester 1 are from fall 2006; data for semester 2 are from spring 2007 and summer 2007; data for semester 3 are from fall 2007; and data for semester 4 are from spring 2008 and summer 2008.

Participation in Program Services

The two-semester Enhanced Opening Doors program operated during the fall 2006 and spring 2007 semesters. Prior to the start of the fall 2006 semester, 444 students signed up to participate in the MDRC study; 224 were randomly assigned to the program group and the remaining 220 were randomly assigned to the control group. Students assigned to the program group were told that they were required to participate in the program.

During the first program semester of the study (fall 2006), the Enhanced Opening Doors requirements included (1) completion of an education plan that identified goals and a timeline with steps to achieve those goals; (2) enrollment in a three-credit College Success course;⁴ and (3) a minimum of five visits to the Success Centers, including completion of five

⁴Credits were not applicable toward a degree and were nontransferable. The three-credit course comprised a two-credit lecture course linked to a one-credit workshop in which students would apply the principles covered in the lecture.

assignments at the Success Centers that counted toward a student's grade in the College Success course.

During the second program semester of the study (spring 2007), a two-credit College Success course was offered to program group students on a voluntary basis.⁵ However, visiting Success Centers was not an explicit expectation of the College Success course or the program more broadly, although Chaffey administrators hoped that habits formed during the first program semester course would continue during the second program semester and beyond. Summarized here are some key quantifiable measures of program participation.⁶

As shown in Table 3.1, approximately 72 percent of all program group students registered for the College Success course during the first program semester, and around 29 percent of all program group students registered for the College Success course during the second program semester. Most students who enrolled in the second semester Success Course had also enrolled in the first semester Success Course. In the postprogram semesters (the third and fourth semesters), very few program group students enrolled in a College Success course, although some control group students (4.5 percent in the third semester) did enroll in this type of course. If the College Success course has a positive effect on students, the fact that a small percentage of control group students were able to take the course in the postprogram semesters may slightly dilute estimated program effects beyond the first year of the study.

Program group students visited the Success Centers significantly more often than their control group counterparts, particularly during the first program semester, when visits were an integrated part of the required College Success course. During the first program semester, around 69 percent of program group members visited a Success Center at least once, with the average number of visits being 5.5 times.⁷ In contrast, during the same semester, only 32 percent of control group members visited a Success Center at least once, with the average number of visits being 1.8 times.

During the second program semester (spring 2007), visiting the Success Centers was not an explicit expectation of the College Success course. Nonetheless, college administrators were optimistic that the habits formed during the first semester would translate into behaviors in the second semester and beyond. Despite these hopes, Success Center usage dropped to only 29 percent of program group students during the second program semester. While the decrease in Success Center usage was dramatic, usage by program group students still exceeded usage by

⁵Credits for this course, like those for the first semester course, were non-degree-applicable and non-transferable.

⁶A more detailed description of the program services appears in Scrivener, Sommo, and Collado (2009).

⁷This average includes the full sample; that is, it includes zeros for the 31 percent of students who never visited the Success Centers.

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Table 3.1

Enrollment, Registration in College Success Course, and Visits to Success Center, Enhanced Opening Doors Study, First Four Semesters

Chaffey College Four-Year Follow-Up Report

Outcome	Program Group	Control Group	Difference (Impact)	Standard Error
Enrolled ^a (%)				
First semester	85.3	80.9	4.4	3.6
Second semester	67.9	61.8	6.1	4.5
Third semester	41.5	47.3	-5.8	4.7
Fourth semester	36.6	36.8	-0.2	4.6
Registered for a College Success course ^b (%)				
First semester	72.3	0.5	71.9 ***	3.1
Second semester	29.0	0.0	29.0 ***	3.1
Third semester	2.7	4.5	-1.9	1.8
Fourth semester	0.4	0.9	-0.5	0.8
Ever visited a Success Center (%)				
First semester	68.8	31.8	37.0 ***	4.4
Second semester	28.6	20.5	8.1 **	4.1
Third semester	20.5	20.5	0.1	3.8
Fourth semester	16.5	15.9	0.6	3.5
Number of visits to Success Center				
First semester	5.5	1.8	3.7 ***	0.7
Second semester	2.5	1.3	1.2 ***	0.5
Third semester	2.0	1.5	0.5	0.5
Fourth semester	1.5	1.2	0.3	0.4
Sample size (n = 444)	224	220		

SOURCES: MDRC calculations using Chaffey College transcript and Success Center participation data.

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

A two-tailed t-test was applied to differences between research groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

Estimates are adjusted by round of random assignment.

^aThe summer semesters are included as part of the spring semester results.

^bRegistered for any Opening Doors College Success course. Opening Doors College Success courses include Guidance 506 College Success, Guidance 511 College Success Seminar, and Guidance 592D Special Topics: Guidance.

control group students, of whom only 21 percent ever visited a Success Center during the second semester of the study. Beyond the second semester, once the program was complete, use of the Success Centers continued to drop and rates of usage were similar for program and control group students.

Part of the decreased Success Center usage from semester to semester simply reflects a decrease in the percentage of students enrolling at Chaffey overall; however, the rates of usage *among program group members who enrolled at Chaffey* dropped steeply between the first and second program semesters, from 81 percent (68.8/85.3) to only 42 percent (28.6/67.9). Similarly large drop-offs were *not* observed for control group students, who started at a much lower rate of Success Center usage. This suggests that once students were no longer expected to visit the Success Centers, usage largely returned to typical (lower) levels.

The participation data show that, generally speaking, program and control group students had significantly different experiences during the first program semester of the Enhanced Opening Doors program. Most program group students took the College Success course, whereas control group students did not, and program group students visited the Success Centers more often than did their control group counterparts. The program's theory is that completing the College Success course and visiting the Success Centers will enable students to perform better academically during the program, but also, the skills and study habits they gain through these experiences may translate into longer-term success. During the second program semester (spring 2007), the experiences of program and control group students once again differed, although not nearly as dramatically as during the first program semester. Once the program was over, students' use of the Success Centers was about the same, regardless of their experiences with the Enhanced Opening Doors program. The next section turns to the impact of the program on various outcomes during the first and second program semesters, as well as during the first and second postprogram semesters.

The Effects of the Enhanced Opening Doors Program

The Enhanced Opening Doors program was designed to help students on probation improve their performance in college and move off probation. This section describes the effects of the program on various educational outcomes, including students' continued enrollment (persistence), academic standing (that is, probation status), grade point average (GPA), and credit accumulation. The outcomes described in this chapter are measured at Chaffey College only, since during the first two years after students entered this study only a small percentage of students attended or transferred to other institutions. Chapter 4, which focuses on the long-term effects of the Enhanced Opening Doors program, examines the impact of the program at Chaffey College and other postsecondary institutions. Box 3.1 explains how to read the tables that are discussed below and in Chapter 4.

Box 3.1

How to Read the Impact Tables in This Report

Most tables in this report use the format illustrated in the abbreviated table below, which displays some hypothetical transcript data and educational outcomes for the program and control groups. The first row, for example, shows that, by the end of the first semester, program group students had earned an average of 4.5 total credits and control group students had earned an average of 3.0 total credits.

The “Difference” column in the table shows the differences observed between the two research groups’ outcomes — that is, the program’s *estimated impacts* on the outcomes, or estimates of the *true impacts* (which are impossible to determine). For example, the estimated impact on average total credits earned can be calculated by subtracting 3.0 from 4.5, yielding an estimated impact of 1.5 average total credits earned. This difference represents the estimated impact of the program rather than the true impact because, although study participants are randomly assigned to the program and control groups, the result would have been different if a different group of students had been included in the study or if they had been randomized in a different way.

Differences marked with one asterisk or more are *statistically significant*, meaning that there is a high probability that the program had an impact (positive or negative) on student outcomes. The number of asterisks indicates the probability that an impact at least as large as the one observed in the study would have occurred even if the program’s true impact had been zero. One asterisk corresponds to a 10 percent probability; two asterisks, a 5 percent probability; and three asterisks, a 1 percent probability. The more asterisks, the more likely the program had an impact on student outcomes. The impacts in the table excerpt below have three asterisks each, which indicates that they are statistically significant at the 1 percent level — meaning that there is only a 1 percent chance of observing an impact this large (or larger) if the program actually had no effect on total credits earned. In other words, there is a 99 percent level of confidence that the program had a positive impact on the average number of total credits earned.

Also shown in the table is the standard error of the impact estimate. The standard error is a measure of uncertainty or variability around the impact estimate. Some useful rules of thumb are that there is about a 90 percent chance that the true impact is within plus or minus 1.65 standard errors of the estimated impact, roughly a 95 percent chance that the true impact is within plus or minus 1.96 standard errors of the estimated impact, and about a 99 percent chance that the true impact is within plus or minus 2.58 standard errors of the estimated impact. For example, in the first row of data below, there is roughly a 99 percent chance that the program’s impact on students’ average total credits earned lies between 0.5 and 2.5, calculated as $1.5 \pm (2.58 \times 0.4)$.

Outcome	Program Group	Control Group	Difference (Impact)	Standard Error
<u>Cumulative total credits earned</u>				
First semester	4.5	3.0	1.5 ***	0.4
Second semester	9.1	6.1	3.0 ***	0.8

Recall that the Enhanced Opening Doors program at Chaffey includes a three-credit College Success course (which was also offered to the control group, but not required, and which very few of them took — suggesting that in the absence of the program, students would be unlikely to take this course). The College Success course and its associated three credits cannot be applied toward a degree and cannot be transferred to another institution. As a result, for certain outcome measures (GPA and credit accumulation), results are presented both including and excluding this course.⁸ Interpreting the program’s short-term effects is complicated, since taking the College Success course does not *directly* push students closer to a degree. However, the College Success course (and Success Center visits) may increase students’ chances of completing their other required courses and may improve their likelihood of passing courses in future semesters.

Table 3.2 presents information on sample members’ academic performance during the two program semesters (fall 2006 and spring 2007) and the two subsequent postprogram semesters (fall 2007 and spring 2008).

Persistence

In order for students to graduate they must accumulate credits, which can occur only if they enroll in class. For this reason, any program that successfully increases enrollment rates has a very good chance of exerting an impact on students’ credit accumulation and therefore their likelihood of graduating. Table 3.2 considers two measures of persistence — that is, continued enrollment — that are useful for interpreting the program’s impacts on other key short-term outcomes like probation status, grade point average, and credit accumulation. The first panel examines enrollment (registration) rates for program and control group members during the first through fourth semesters after students joined the study. These numbers help answer the question, “Did the Enhanced Opening Doors program have an impact on enrollment *during* semester x ?” The second panel considers the average cumulative number of semesters that program and control group members enrolled since the start of the study. These numbers help answer the question, “Since the start of the study, did the Enhanced Opening Doors program have an impact on *cumulative* semesters enrolled as of semester x ?”

⁸GPA is calculated in two ways: (1) using grades earned in all courses except for developmental courses (this measure includes the College Success course), and (2) using grades earned only in degree-applicable courses, which excludes the College Success course, developmental courses, and other non-degree-applicable courses. Credit accumulation is also calculated in two ways: (1) including all credits, and (2) including degree-applicable credits where students earned a “C” or higher and developmental credits. (That is, this excludes the College Success course as well as a nominal number of other non-degree-applicable courses that are not developmental courses.)

The Opening Doors Demonstration

Table 3.2

Academic Outcomes Among Sample Members at Chaffey College, Enhanced Opening Doors Study, First Four Semesters

Chaffey College Four-Year Follow-Up Report

Outcome	Program Group	Control Group	Difference (Impact)	Standard Error
Registered for any courses (%)				
First semester	85.3	80.9	4.4	3.6
Second semester	67.9	61.8	6.1	4.5
Third semester	41.5	47.3	-5.8	4.7
Fourth semester	36.6	36.8	-0.2	4.6
Cumulative number of semesters enrolled				
First semester	0.85	0.81	0.04	0.04
Second semester	1.53	1.43	0.10	0.07
Third semester	1.95	1.90	0.05	0.10
Fourth semester	2.31	2.27	0.04	0.13
In good academic standing ^a (%)				
First semester	21.9	12.3	9.6 ***	3.6
Second semester	24.1	13.6	10.5 ***	3.7
Third semester	20.1	16.4	3.7	3.7
Fourth semester	20.1	19.1	1.0	3.8
Cumulative GPA higher than 2.0 ^b (%)				
First semester	40.2	21.8	18.4 ***	4.3
Second semester	36.6	25.5	11.2 **	4.4
Third semester	36.2	30.0	6.2	4.5
Fourth semester	34.8	30.5	4.4	4.5
Cumulative degree-applicable GPA higher than 2.0 ^c (%)				
First semester	24.1	21.4	2.7	4.0
Second semester	30.8	25.0	5.8	4.3
Third semester	29.9	30.0	-0.1	4.4
Fourth semester	29.9	30.5	-0.5	4.4
Cumulative credits earned				
First semester	4.6	3.2	1.4 ***	0.4
Second semester	9.3	6.4	3.0 ***	0.8
Third semester	11.6	8.6	3.1 ***	1.1
Fourth semester	14.0	10.8	3.2 **	1.4
Cumulative degree-applicable and developmental credits earned ^d				
First semester	2.6	2.7	-0.1	0.3
Second semester	6.3	5.4	1.0	0.7
Third semester	8.3	7.3	1.0	0.9
Fourth semester	10.4	9.3	1.1	1.2
Sample size (n = 444)	224	220		

(continued)

Table 3.2 (continued)

SOURCES: MDRC calculations from Chaffey College transcript and probation data.

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

A two-tailed t-test was applied to differences between research groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

Estimates are adjusted by round of random assignment.

Cumulative measures are based on semesters 1 through 4; summer terms are included in spring semester results.

^aSample members who were not enrolled were not considered to be in good academic standing.

^bGrades earned in all courses except for developmental courses are used in the calculation of GPA. Students who do not have a GPA for this time period are included as zeros.

^cGrades earned only in degree-applicable courses, which exclude the College Success course, are used in this calculation of GPA. Students who were not registered and thus do not have a GPA for this time period are included as zeros.

^dIncludes credits earned in courses taken during the first four semesters of the study and excludes credits from the College Success course. If a student receives a letter grade in a course, this measure only includes credits in which the student earned a “C” or higher. If a student takes a class “pass/fail” or if the class is only offered “pass/fail,” then this measure only includes a grade of “pass.”

During the first program semester (fall 2006), 85.3 percent of program group students and 80.9 percent of control group students registered for at least one course. This difference is not statistically significant. It is not surprising that the differences in registration rates during the first program semester were not significant, because registration occurred before the program group students received many program services, if any. During the second program semester (spring 2007), the program had an estimated impact of 6.1 percentage points on students’ likelihood of enrolling at Chaffey College. Although this impact is not statistically significant, its magnitude may be considered significant in practical terms, despite a great deal of uncertainty around its accuracy.⁹ Given this study’s limited sample size of 444, the impact would have to have been approximately 7.5 percentage points in order to be deemed statistically significant. While the second program semester impacts are somewhat promising with respect to persistence, in the subsequent two postprogram semesters (fall 2007 and spring 2008), the program did not have meaningful effects on current enrollment or on cumulative number of semesters enrolled.

Good Academic Standing

A key goal of Chaffey’s Enhanced Opening Doors program is to move students off probation and into good academic standing. Achieving this goal may get students back on track toward accumulating the necessary credits to earn a certificate or degree, or to transfer to a four-

⁹This study’s sample size is only 444 students — much smaller than the typical sample size for an MDRC study of a program designed to help community college students. (Usual sample sizes exceed 1,000 students.) As a result, the smallest “true” impact that can be detected with a high degree of confidence is fairly large. Consequently, while the 6.1 percentage point impact has a large margin of error, it may still be noteworthy.

year college. The third panel of Table 3.2 displays the percentage of students in good academic standing during each semester. Only registered students are considered eligible to be counted among those in good academic standing.¹⁰

During the first program semester, 22 percent of program group members were in good academic standing, whereas 12 percent of control group members were in good academic standing. The estimated 10 percentage point difference is statistically significant, showing that the program improved students' chances of being in good academic standing. In the second program semester, 24 percent of program group members were in good academic standing, whereas 14 percent of control group members were in good academic standing. The estimated impact of the program is 10 percentage points, about the same as it was during the first semester. In line with the program's theory, during the two program semesters, students were able to get off probation at a higher rate than they would have without the program. However, after the program was complete, during the following two postprogram semesters, program and control group students were in good academic standing at similar rates, suggesting that this program effect was short-lived.

Grade Point Average

Grade point average is a common indicator of academic performance. Although some researchers believe that GPA provides little information about what students have actually learned,¹¹ it may still represent an amalgamation of factors like learning, effort, and tenacity. The fourth and fifth panels of Table 3.2 show two different versions of cumulative GPA over four semesters. The first version uses the student's cumulative GPA for all credit-bearing courses taken since the start of the study, whether or not they can be applied toward a degree. The second version uses the student's cumulative GPA only for degree-applicable courses taken since the start of the study — that is, this second measure excludes credit from the College Success course and other courses that are not applicable toward a degree. Shown under both GPA definitions are the percentages of students with a GPA higher than 2.0.¹²

During the first program semester, more program group students than control group members (by 18 percentage points) had a GPA higher than 2.0, when the College Success course is included in the GPA calculation. By the end of the second semester of the study, the program's impact on GPA remained positive and significant, although the effect appears to have been diminishing. Two years after the study began (fourth semester), there was a difference of only 4

¹⁰In other words, students who do not register are automatically considered “not in good academic standing.”

¹¹Adelman (2004).

¹²Students who have not registered since random assignment are considered not to have a GPA of 2.0 or higher.

percentage points between program group members and control group members with a cumulative GPA higher than 2.0 — continuing the trend of a diminishing program effect on GPA.

MDRC's earlier report on the Enhanced Opening Doors program (as well as Table 1.2 in this report) showed that at the end of the first two program semesters the program had a statistically significant impact on cumulative degree-applicable GPA.¹³ This finding was viewed as particularly promising since it is not an artifact of the required non-degree-applicable College Success course. Unlike the original analyses, in Table 3.2 the second program semester cumulative degree-applicable GPA includes the summer term (data that were not available at the time of the earlier report). As can be seen, by the end of the second program semester (summer included), the program's estimated impact on cumulative degree-applicable GPA is still positive, but is not statistically significant. Continued follow-up through two postprogram semesters shows that the percentage of program and control group members who have a cumulative degree-applicable GPA of 2.0 or higher is very similar during the semesters after the program is complete.

Credit Accumulation

Credit accumulation is a key indicator that students are making progress toward a degree. In order for Chaffey students to earn an associate's degree, they must earn at least 60 degree-applicable credits.¹⁴ For those students who place into developmental coursework, developmental credits earned (which are not applicable toward a degree) may also indicate progress toward a degree since students are encouraged to take these courses before moving on to degree-applicable courses.¹⁵ In addition to degree-applicable credits and developmental credits, Chaffey College offers courses that are not developmental and not degree-applicable, like the College Success course. The last two panels in Table 3.2 exhibit two measures of credit accumulation: (1) cumulative credits earned, which includes *all* forms of credits earned (including the three credits offered by the College Success course, which are not applicable toward a degree) and (2) cumulative degree-applicable and developmental credits earned, which are the types of credits that are most relevant to earning a degree.

¹³Scrivener, Sommo, and Collado (2009).

¹⁴Courses with degree-applicable credits do not include developmental courses, the three-credit College Success course that is a requirement of the Enhanced Opening Doors program at Chaffey College, or a nominal number of other courses.

¹⁵A 1988 lawsuit in California brought forward by the Mexican American Legal Defense Fund challenged educational policies that disproportionately directed Latinos into developmental courses. As part of the settlement, the California Community College Board of Governors proposed a complex set of revisions to Title 5 regulations regarding prerequisites, assessment, and student placement. These regulations and their import for local practice is still a matter of debate; however, they have been widely interpreted by community college administrators to prohibit mandatory placement (Perry, Bahr, Rosin, and Woodward, 2010).

With respect to cumulative credits earned (shown in the second-to-last panel of Table 3.2), over the course of the first four semesters after random assignment, the program had a strong positive effect. The estimated impact during the first through fourth semesters was 1.4 credits, 3.0 credits, 3.1 credits, and 3.2 credits, respectively. Since these numbers are cumulative, past program effects carry forward to the future. In this case, it appears that the majority of the impact on cumulative credits earned occurred during the two program semesters, and the effect was maintained during the two postprogram semesters.

A comparison of cumulative degree-applicable and developmental credits earned (last panel in Table 3.2) with all cumulative credits earned (second-to-last panel) indicates how much of the impact on total credits earned is a result of the non-degree-applicable College Success course.¹⁶ Notably, the first program semester impact on credit accumulation is driven entirely by non-degree-applicable credits, as demonstrated by the estimated impact of near zero on degree-applicable and developmental credits earned. Since this measure ignores the three-credit College Success course, which most program group students took during the first semester, the fact that program group students did not fall behind control group members on degree-applicable and developmental credits is consistent with the program developers' expectations for this time period. In other words, despite having an additional three-credit class as part of their course load, program group students managed to keep pace with their control group counterparts. The skills and study habits learned in the College Success course may translate into better performance in future courses, resulting in additional credits earned during the second semester and beyond, after most program group students completed a College Success course.

Looking at degree-applicable and developmental credits earned in the second, third, and fourth semesters, however, fails to confirm that hypothesis: the program's positive effects on the total credit accumulation measure do not appear to have translated into meaningfully large positive impacts on cumulative degree-applicable and developmental credits earned.

Summary

Overall, the Enhanced Opening Doors program at Chaffey College had positive impacts on students' academic standing, GPA, and total credit accumulation (including credits awarded for the College Success course) through two semesters after random assignment. However, there is no evidence of meaningful impacts on enrollment rates or accumulation of degree-applicable and developmental credits. The next chapter follows the same cohort of students for up to four years after the MDRC Enhanced Opening Doors study began, to assess whether the program has positive impacts on students' long-term academic outcomes.

¹⁶A nominal number of other non-degree-applicable courses are also excluded from this measure.

Chapter 4

Long-Term Impacts

Chapter 3 of this report — which focused on the effect of the Enhanced Opening Doors program on students' outcomes during the first two years of the study — showed that the opportunity to participate in the program improved some student outcomes during the two program semesters when the program was running, although the effects largely faded by the end of the first two postprogram semesters, after the program had been completed. This chapter presents new findings related to the program's impact on students' academic progress and completion, as defined below, during the academic year in which the program ran,¹ as well as in the three subsequent postprogram years, for a total of four years of follow-up after the study began. Figure 4.1 maps the time period described in this chapter, with black arrows representing the program semesters.

This long-term follow-up report focuses on whether the program helped improve students' academic progress and/or completion, as measured by three indicators of success:

1. Persistence, or continued enrollment — indicates progress
2. Credit accumulation — indicates progress
3. Attainment of a degree or certificate — indicates completion

Summary of Key Findings

Despite the program's positive effects during the two semesters in which it ran, long-term academic progress and completion among students in Enhanced Opening Doors was not significantly different from the long-term academic progress and completion among students in the control group, who could receive Chaffey College's usual services (see Table 4.1). A summary of the key findings follows:

- **Persistence.** Four years after students entered the study, those who were randomly assigned to the Enhanced Opening Doors program had enrolled in college for almost the exact same number of semesters as their control group counterparts (4.2 compared with 4.1, respectively). The estimated 0.1 difference is not statistically significant.

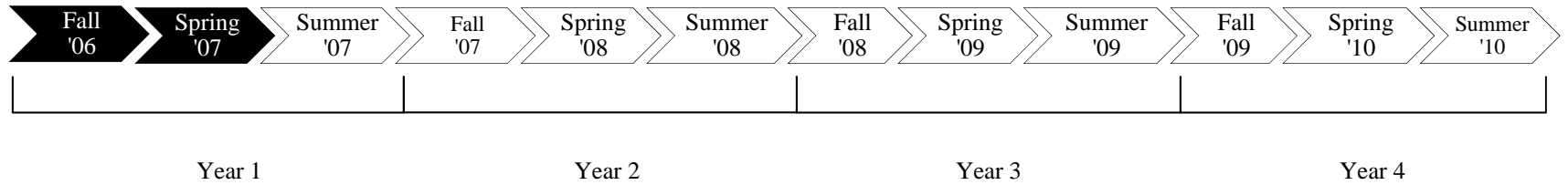
¹This time period includes the two program semesters — fall 2006 and spring 2007 — as well as the summer 2007 semester. That is, data were collected for fall, spring, and summer, but the program ran during the fall and spring semesters only.

The Opening Doors Demonstration

Figure 4.1

Data Collection Timeline, Years One Through Four of Enhanced Opening Doors Study

Chaffey College Four-Year Follow-Up Report



34

- Program semester
- Postprogram semester

NOTES: Enrollment and credits earned are based on data from fall 2006 through summer 2010. Degree and certificate data are from fall 2006 through spring 2010.

The Opening Doors Demonstration

Table 4.1

Primary Academic Outcomes Among Sample Members, Enhanced Opening Doors Study, Four Years After Random Assignment Chaffey College Four-Year Follow-Up Report

Outcome	Program Group	Control Group	Difference (Impact)	Standard Error
Number of semesters enrolled at any college	4.18	4.06	0.12	0.24
Cumulative degree-applicable and developmental credits earned ^{a,b}	18.4	17.1	1.4	1.9
Enrolled at any college in year 4 or earned a degree or certificate (%)	45.5	45.5	0.1	4.7
Enrolled at any college in year 4	44.2	44.1	0.1	4.7
Earned a degree or certificate	7.6	6.4	1.2	2.4
Sample size (n = 444)	224	220		

SOURCES: MDRC calculations from Chaffey College transcript, California Community College Chancellor's Office, and National Student Clearinghouse data.

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

A two-tailed t-test was applied to differences between research groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

Estimates are adjusted by round of random assignment.

Enrollment and credits earned are based on data from fall 2006 through summer 2010. Degree and certificate data are from fall 2006 through spring 2010.

^aIncludes credits earned in courses taken during the first four years of the study and excludes credits from the College Success course. If a student receives a letter grade in a course, this measure only includes credits in which the student earned a "C" or higher. If a student takes a class "pass/fail" or if the class is only offered "pass/fail," then this measure only includes a grade of "pass."

^bAt any public, two-year California college.

- **Credit accumulation.** Four years after students entered the study, those who were randomly assigned to the Enhanced Opening Doors program had not earned significantly more credits (combining degree-applicable and developmental credits, but excluding the College Success course credits) than their control group counterparts.
- **Attainment of a degree or certificate.** Four years after students entered the study, those who were randomly assigned to the Enhanced Opening Doors program had not earned a degree or certificate at a significantly higher rate than their control group counterparts.

Greater details on these findings are presented throughout the remainder of this chapter.

Detailed Findings

Measuring the long-term effects of a program like Enhanced Opening Doors at Chaffey College can be complicated by several factors. First, the goals of community college students vary. Some seek to earn a certificate, some seek to earn an associate's degree, and still others plan to transfer to a four-year institution to complete the requirements for a bachelor's degree and beyond. Second, data limitations mean that not all indicators of academic progress or success can be captured at all institutions. Third, the goals of students may not always align perfectly with the goals of the college; for instance, while the college is invested in seeing its students graduate there, the students may not care whether they graduate from that college or another one as long as they get a degree. Despite these challenges, examining three main indicators of academic progress and completion, measured at various institutions (that is, at Chaffey College only, at California community colleges only, and at all colleges, both two- and four-year, throughout the United States),² can provide a thorough picture of the long-term success of the Enhanced Opening Doors program.

Notably, from the perspective of the student, academic progress or completion at Chaffey College or at any other college may be viewed as a positive outcome; however, it is also interesting to note whether students succeeded at Chaffey College alone, since that is where students began this study. MDRC's primary focus is on the student perspective, so the main findings in this chapter are presented for all institutions, but Appendix Table A.5 includes results for Chaffey College alone.

The detailed findings presented below are organized by the three indicators of college success — persistence, credit accumulation, and attainment of a degree or certificate — with the measures described first, followed by a description of the program's impacts.

Persistence

Measures

Since students can only earn credits if they enroll in college, continued enrollment is a good proxy measure for students' progress toward a degree, especially when information on credit accumulation is unavailable.³ Table 4.2 depicts continued enrollment during the first four years after the study began. The first panel focuses on the cumulative number of semesters in which students had been enrolled as of the end of the first, second, third, and fourth years after the study began. For example, at the end of the program year, program group students had been

²Subject to the limitations of the National Student Clearinghouse data.

³Given this study's data sources, credit accumulation data are unavailable for four-year colleges and private colleges in California, and all colleges outside of California.

The Opening Doors Demonstration

Table 4.2

**Enrollment at Any U.S. College Among Sample Members,
Enhanced Opening Doors Study, Years One Through Four**

Chaffey College Four-Year Follow-Up Report

Outcome	Program Group	Control Group	Difference (Impact)	Standard Error
Cumulative number of semesters enrolled				
Year 1	1.59	1.52	0.07	0.06
Year 2	2.63	2.56	0.07	0.13
Year 3	3.48	3.35	0.12	0.19
Year 4	4.18	4.06	0.12	0.24
Number of colleges ever attended	1.41	1.44	-0.03	0.08
Enrolled at any U.S. college (%)				
Year 1	90.6	90.9	-0.3	2.8
Year 2	62.0	62.7	-0.7	4.6
Year 3	51.8	45.9	5.9	4.7
Year 4	44.2	44.1	0.1	4.7
Enrolled at any 4-year U.S. college (%)				
Year 1	1.3	3.2	-1.8	1.4
Year 2	4.5	3.6	0.8	1.9
Year 3	6.2	6.8	-0.6	2.4
Year 4	8.0	7.7	0.3	2.6
Enrolled at any 2-year U.S. college (%)				
Year 1	90.2	90.0	0.2	2.8
Year 2	58.5	61.8	-3.4	4.7
Year 3	47.8	41.8	5.9	4.7
Year 4	37.1	38.2	-1.1	4.6
Sample size (n = 444)	224	220		

SOURCES: MDRC calculations from Chaffey College transcript, California Community College Chancellor's Office, and National Student Clearinghouse data.

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

A two-tailed t-test was applied to differences between research groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

Estimates are adjusted by round of random assignment.

enrolled for an average of 1.59 semesters, whereas control group students had been enrolled for an average of 1.52 semesters. (The difference is not statistically significant). The remaining panels focus on the percentage of students currently enrolled during each of the four follow-up years (that is, not cumulatively).⁴ For example, 90.6 percent of program group members and 90.9 percent of control group members enrolled at any U.S. college at some point during the year after the study began. Similar enrollment data are provided for any four-year college and any two-year college.

Over the long term, continued enrollment can be somewhat difficult to interpret because some students stop enrolling after they have earned a degree or certificate. Thus, over the long term, lack of enrollment can be a positive outcome. As a result, the outcome “enrolled *or* earned a degree/certificate” is also examined later in this chapter to determine the program’s long-term effects.

Impacts

Before discussing the program’s impact on persistence (by comparing program group students’ outcomes with those of the control group students), it is worth noting the overall enrollment trends through the first four years of the study, as shown in Table 4.2. Mimicking national trends, many students in this study “stopped out” (that is, did not enroll in any classes for a period of time and then returned to school) or dropped out over the four-year follow-up period. During the first year, just over 90 percent of all students in the study sample enrolled at any college. Enrollment rates declined sharply in the second year, when just over 60 percent of all students enrolled at any college — nearly a 30 percentage point drop-off from the previous year. The sharp decline leveled off a bit in the third and fourth years, but nonetheless, enrollment rates in the fourth year hovered around 44 percent. As explained in more detail later in this chapter, the decline was not attributable to large numbers of students earning degrees or certificates. (Only about 7 percent achieved this goal by the end of the fourth year.) These overall trends reaffirm the general challenge of getting students to persist and complete the requirements for a degree in community college.

Given that challenge, one interest of this study was whether Enhanced Opening Doors led program group students to enroll in college at a higher rate. Throughout the four-year follow-up period, students in the program group did not enroll in college at a significantly higher rate than their control group counterparts. The results are consistent whether persistence is measured cumulatively (that is, comparing the total number of semesters in which students enrolled) or based on students’ current enrollment status (that is, comparing the percentage of

⁴Students are counted as enrolled in a given year if they enrolled for a class in at least one semester during that year.

students enrolled during a given year). Table 4.2 also shows that enrollment rates in four-year colleges and two-year colleges were roughly the same for the program and control groups — that is, no statistically significant differences were found between the two groups, meaning that there is no strong evidence that the program helped (or harmed) students compared with the college’s usual services.

Overall, with respect to the likelihood that students will continue to enroll in college, there is little evidence that the program had added value above and beyond the college’s usual services.

Credit Accumulation

Measures

As noted in Chapter 3, credit accumulation is a key indicator that students are making progress toward a degree. Some of the impacts of Enhanced Opening Doors during the program semesters were driven partially by the non-degree-applicable credits that students earned in the program’s three-credit College Success course; consequently, it is important to assess whether these findings translate into longer-term impacts on measures that focus on the courses students need to take in order to graduate. For this reason, credit accumulation is examined in two ways. The first measure includes all credits, and the second measure includes degree-applicable and developmental credits only.⁵

During the program year, it would have been challenging for program group students to earn more degree-applicable credits plus developmental credits than their control group counterparts, since their course loads included the College Success course, which most of the control group members did not take. However, during the three postprogram years, differences in credits earned in degree-applicable courses plus developmental courses (that is, the courses students need to complete in order to graduate) would indicate whether the program helped students progress toward a degree.

Impacts

Figure 4.2 plots the program’s impact on cumulative total credits earned (including the College Success course) during each of the four years after the study began. During the program

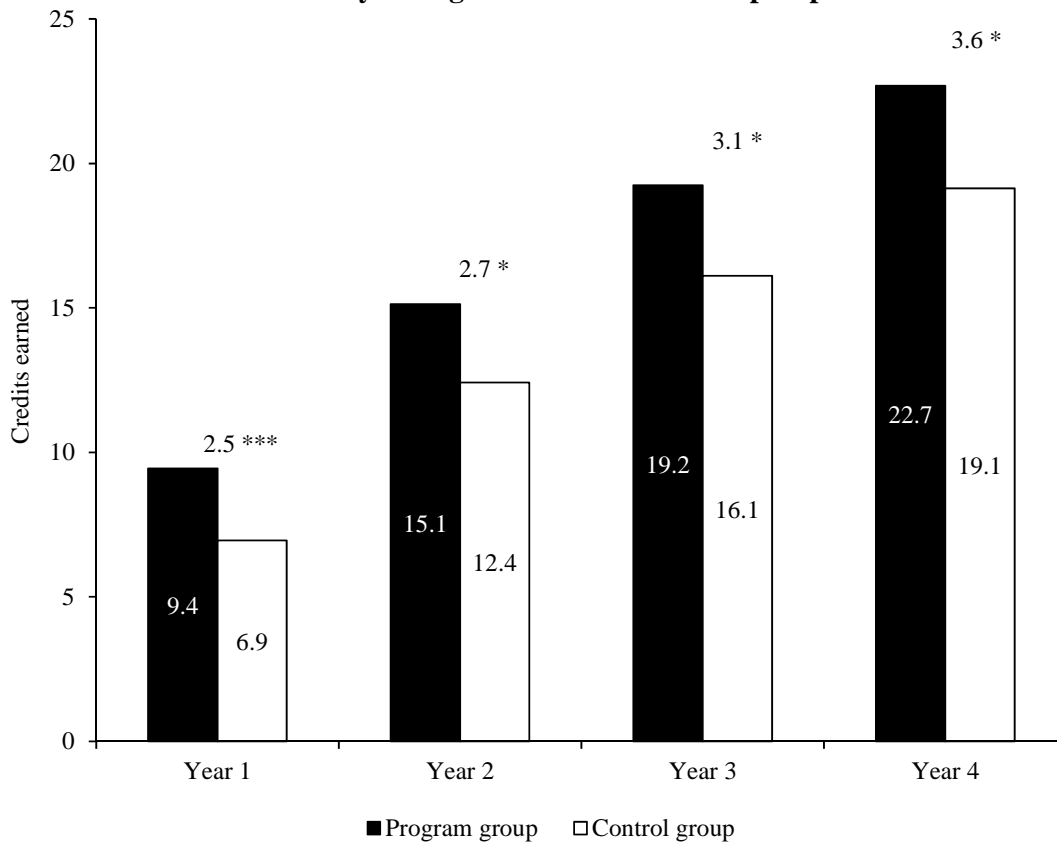
⁵Data on credit accumulation are limited to two-year public colleges in the state of California. As a result, if program and control group members enroll in and/or earn credits at a different rate at the institutions where data are not available, then the estimated impact on credit accumulation could be biased. However, program and control group students enrolled in the colleges where credit accumulation data are unavailable at similar rates; consequently, credit accumulation data are unlikely to be significantly biased.

The Opening Doors Demonstration

Figure 4.2

Cumulative Credits Earned Among Sample Members at Any Public, Two-Year California College, Enhanced Opening Doors Study, Years One Through Four

Chaffey College Four-Year Follow-Up Report



SOURCES: MDRC calculations from Chaffey College transcript and California Community College Chancellor's Office data.

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

A two-tailed t-test was applied to differences between research groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

Estimates are adjusted by round of random assignment.

year, program group students earned 9.4 total credits, whereas their control group counterparts earned 6.9 total credits, for an estimated program impact of 2.5 credits (nearly one full course). This positive impact, which is statistically significant, persisted through the end of the four-year follow-up period, at which point program group students had earned 3.6 more credits than their control group counterparts, most of which was carryover from the first-year effect. While the impact on total credits earned is driven in part by the College Success course credits, the skills and strategies learned in this course could have translated into long-term impacts on credit accumulation in other classes that counted toward a degree.

Figure 4.3 shows the program's impact on degree-applicable plus developmental credits earned. Despite the program's promising effects on total credit accumulation (that is, including the non-degree-applicable College Success course), these effects do not translate into significant impacts when the College Success course credits are excluded. During each of the four years of follow-up, the average cumulative number of degree-applicable plus developmental credits earned was similar for the program and control groups. At the end of the first year (the program year), students in the full study sample (program and control groups) earned an average of around 6 credits; by the end of the fourth year, students had earned an average of around 17 to 18 credits, with no practically meaningful (or statistically significant) differences between program and control groups along the way.

Appendix Table A.2 provides additional information on credit accumulation.

Attainment of a Degree or Certificate

Measures

In the absence of strong evidence that Enhanced Opening Doors significantly increased credit accumulation, it is unlikely that the program increased students' chances of earning a degree or certificate. However, it is theoretically possible that some of the "college knowledge" that students acquired in the College Success course could have helped them focus on taking the "right" courses to put them on a path toward a degree. In other words, although students in the program did not earn more credits than their control group counterparts, if the credits they did earn were more directly associated with earning a degree, the program still may have had an impact on the attainment of a degree or certificate. This section examines degree or certificate attainment during the four years after the study began.⁶

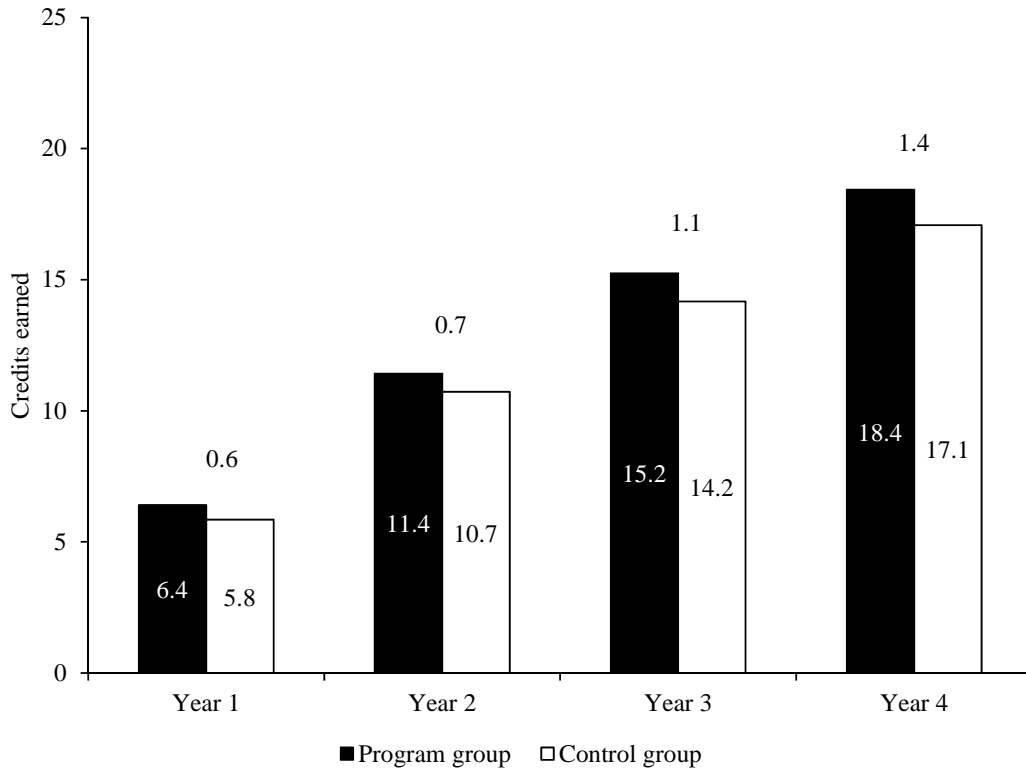
⁶For CCCC schools, only certificates that require 18 credits or more are included.

The Opening Doors Demonstration

Figure 4.3

Cumulative Degree-Applicable and Developmental Credits Earned Among Sample Members at Any Public, Two-Year California College, Enhanced Opening Doors Study, Years One Through Four

Chaffey College Four-Year Follow-Up Report



SOURCES: MDRC calculations from Chaffey College transcript and California Community College Chancellor's Office data.

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

A two-tailed t-test was applied to differences between research groups. No statistically significant differences between research groups were observed.

Estimates are adjusted by round of random assignment.

"Cumulative degree-applicable and developmental credits earned" includes credits earned in courses taken during the first four years of the study and excludes credits from the College Success course. It includes only degree-applicable courses in which students received a grade of "C" or higher, or, for pass/fail courses, which include developmental courses, a passing grade.

In addition to degree/certificate attainment alone (which reflects “completion”), a measure that combines degree/certificate attainment with enrollment (which reflects “progress”) is also examined, to ensure that the program’s impacts on both progress and completion are captured. Many community college students aspire to earn a four-year degree, and among them, some transfer to a four-year institution before earning a degree or certificate at their community college; for those students, continued enrollment may be a sign of continued success. Thus, this measure counts anyone who is either still enrolled or has completed a degree or certificate as a success.

Before examining the results, recall that the target population in this study comprises students on probation, a high-risk group of students with a low likelihood of earning a credential. However, on average, students in the research sample had earned around 14 credits prior to the start of the study, so they had made some progress toward earning a degree when they entered the program. With that in mind, presented below are the program’s effects on degree/certificate attainment.

Impacts

Figure 4.4 displays the percentage of students who earned a degree or certificate at any school by the end of each year of follow-up. What is most striking about the degree/certificate attainment measure is not whether the program had a significant impact on attainment, but rather the low rate of attainment among all study participants. Among the full study sample (program and control), only around 7 percent of all students had earned a degree or certificate four years after the study began. Not surprisingly, given the results for persistence and credit accumulation, the program did not have a significant impact on degree/certificate attainment.

While the rates of degree/certificate attainment presented in Figure 4.4 are low, consider the percentage of students who were still enrolled in college or had earned a degree at the end of the follow-up period — an indication that these students are still progressing toward graduation or have completed an academic goal, as opposed to students who have dropped out completely. As shown in Figure 4.5, four years after the study began, 46 percent of all students in this study were either still enrolled in some college courses or they had earned a degree or certificate. In other words, at least some of the students in the research sample may still be progressing, despite the low rates of completion. However, there is not meaningful evidence that the Enhanced Opening Doors program helped or impeded this long-term progress toward or completion of the requirements for a degree.

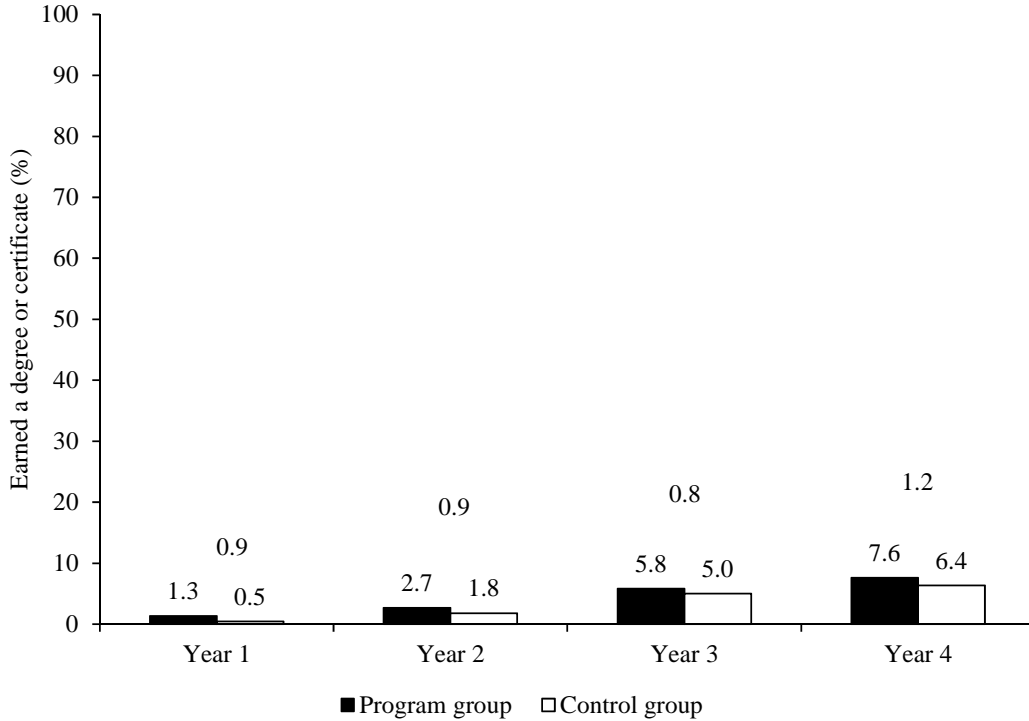
Appendix Table A.3 provides more detailed information on the same measures presented in Figures 4.4 and 4.5.

The Opening Doors Demonstration

Figure 4.4

Percentage of Students in the Study Sample Who Ever Earned a Degree or Certificate at Any U.S. College, Enhanced Opening Doors Study, Years One Through Four

Chaffey College Four-Year Follow-Up Report



SOURCES: MDRC calculations from Chaffey College transcript, California Community College Chancellor's Office, and National Student Clearinghouse data.

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

A two-tailed t-test was applied to differences between research groups. No statistically significant differences between research groups were observed.

Estimates are adjusted by round of random assignment.

Degree and certificate data are from fall 2006 through spring 2010.

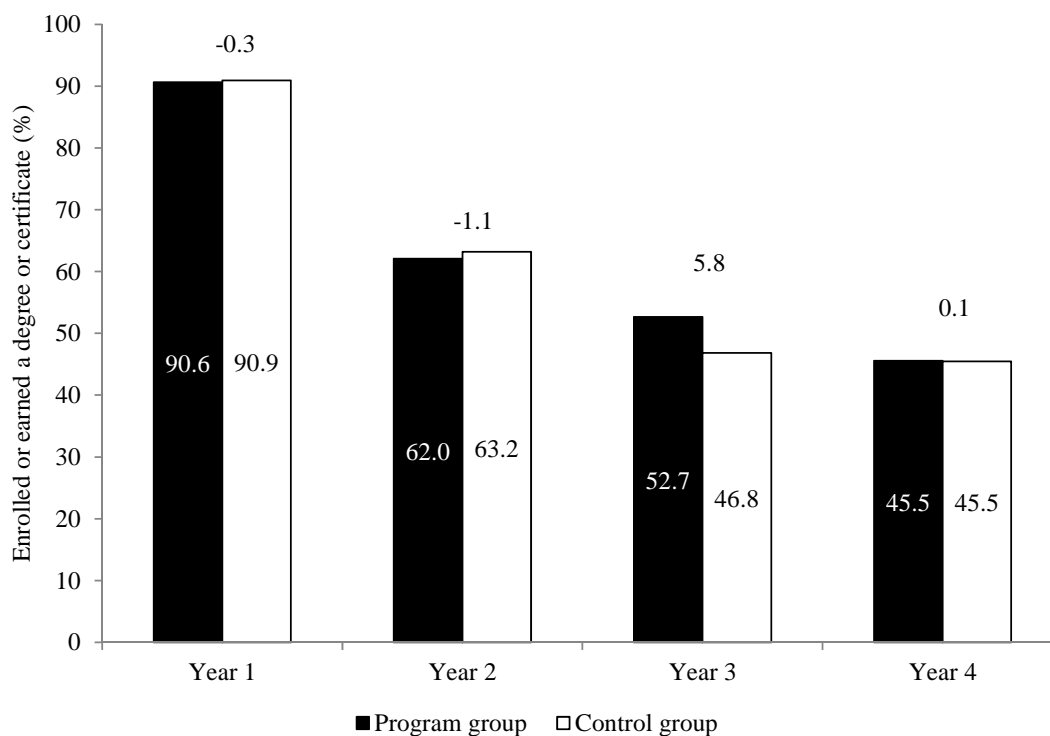
Percentages who earned a degree or certificate are shown directly above each bar. Percentage point differences between the program and control groups are shown above the percentages who earned a degree or certificate.

The Opening Doors Demonstration

Figure 4.5

Currently Enrolled or Earned a Degree or Certificate Among Sample Members at Any U.S. College, Enhanced Opening Doors Study, Years One Through Four

Chaffey College Four-Year Follow-Up Report



SOURCES: MDRC calculations from Chaffey College transcript, California Community College Chancellor's Office, and National Student Clearinghouse data.

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

A two-tailed t-test was applied to differences between research groups. No statistically significant differences between research groups were observed.

Estimates are adjusted by round of random assignment.

Enrollment is based on data from fall 2006 through summer 2010. Degree and certificate data are from fall 2006 through spring 2010.

Percentages who earned a degree or certificate are shown inside the bars. Percentage point differences between the program and control groups are shown above the bars.

Whereas Figures 4.4 and 4.5 focus on earning a degree or certificate, Table 4.3 breaks these results out by type of degree. There is some evidence suggesting that program group students earned a bachelor’s degree at a higher rate than their control group counterparts (1.8 percent compared with 0.0 percent); however, this result should be viewed with great caution since the 1.8 percentage point difference represents only four students.⁷ While over 90 percent of the students in this study did not earn any degree or certificate by the end of the four-year follow-up period, the associate’s degree was the most common accomplishment among those who earned a degree or certificate.

The Opening Doors Demonstration

Table 4.3

**Highest Degree or Certificate Earned at Any U.S. College Among Sample Members,
Enhanced Opening Doors Study, Four Years After Random Assignment
Chaffey College Four-Year Follow-Up Report**

Outcome (%)	Program Group	Control Group	Difference (Impact)	Standard Error
Bachelor's degree	1.8	0.0	1.8 **	0.9
Associate's degree	4.0	5.5	-1.5	2.0
Certificate	1.3	0.9	0.4	1.0
Unknown degree or certificate type	0.4	0.0	0.4	0.5
No degree or certificate	92.4	93.6	-1.2	2.4
Sample size (n = 444)	224	220		

SOURCES: MDRC calculations using Chaffey College transcript, California Community College Chancellor's Office, and National Student Clearinghouse data.

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

A two-tailed t-test was applied to differences between research groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

Estimates are adjusted by round of random assignment.

Degree and certificate data are from fall 2006 through spring 2010.

⁷In addition, caution is urged because this outcome is considered “exploratory” or “secondary.” The “confirmatory” or “primary” analyses described in Table 4.1 “assess how strongly the study’s pre-specified central hypotheses are supported by the data.” In contrast, the “exploratory” or “secondary” analyses shown in Table 4.3 “identify hypotheses that could be subject to future rigorous testing.” See Schochet (2008).

Effects for Selected Subgroups

In addition to the analyses described above, Appendix Table A.4 presents the primary outcomes for sample members who had been on probation for one semester when they entered the study and sample members who had been on probation for two or more semesters at that point. Findings presented in the initial MDRC report on the program suggested that the program was more effective for students who were in their first semester of probation.⁸ However, given the already small sample size in the main analyses, this subgroup analysis is underpowered — that is, the number of students in each group is small enough that the program would have to be substantially more effective for one group compared with the other to observe statistically significant differences in impacts. Not surprisingly, the program’s effects on students’ long-term outcomes did not differ significantly based on their length of time on probation.

Chaffey College Only

Appendix Table A.5 presents academic outcomes (persistence, credit accumulation, and degree/certificate attainment) at Chaffey College only. The results are generally similar to those found when data from other colleges are included, with one exception: there is some evidence that by the end of the third year, students in the program group earned a degree or certificate at Chaffey College at a higher rate than their control group counterparts.

Summary

Overall, there is not strong evidence that the Enhanced Opening Doors program was particularly helpful (or harmful) to students’ long-term academic progress or completion, when compared with Chaffey College’s usual services. These results reinforce the notion that short-term interventions may have short-term impacts, but it is far more difficult to find short-term interventions that have long-term impacts.

⁸Scrivener, Sommo, and Collado (2009).

Chapter 5

Cost-Effectiveness of Enhanced Opening Doors

This chapter is designed to answer questions regarding the decision to invest in College Success courses for probationary students at community colleges. For example, what is the program cost? What is the cost of the college's usual services for probationary students in the absence of a targeted program? What is the net cost of the program compared with the usual services? How can the net cost be lowered? What do net program costs look like when compared with the program outcomes? Finally, what are the policy implications of the program's relative cost-effectiveness?

Key Findings

- During the two program semesters, each program group member represented a cost of approximately \$4,300, and each control group member represented a cost of approximately \$3,000. As a result, the net cost of the Chaffey College Enhanced Opening Doors program during the two program semesters was about \$1,300 per program group member.
- The cost per credit earned for the program group was slightly lower (\$516) than the cost per credit earned for the control group (\$530) during the two program semesters. The relative cost-effectiveness of earning credits in the short term fades away when only degree-applicable and developmental credits are considered — that is, when the College Success course credits are excluded.
- Over the long run, impacts on key outcome measures are not great enough to bring about substantial changes in the cost of achieving desired outcomes.

Methodology

This chapter estimates the cost-effectiveness of the Enhanced Opening Doors program at Chaffey College that took place during the fall 2006 and spring 2007 semesters. The relationship between program costs and program impacts is examined in the short-term, which includes the two program semesters, and over the long term, which includes four years of follow-up. Short-term costs are considered from the perspective of Chaffey College, while long-term costs are considered from the perspective of California two-year public colleges as a whole (that is, sample members who attended or transferred to other schools were followed up); this

approach is intended to reflect the reality that Chaffey College students may attend or transfer to other schools in the long run. All program costs are expressed in dollars, but the monetary value associated with educational outcomes, such as moving into good academic standing and increased credit accumulation, is not estimated in this analysis. The analysis includes only costs that are part of the “steady state” of operation, which means that start-up and research costs have been excluded.

The cost of program components is estimated using program budget documents from Chaffey College. The funding levels in the budget planned for higher rates of participation than actually occurred. For example, 17 sections of the College Success course were budgeted for the fall of 2006, but only 11 actually took place. Similarly, for the spring semester of 2007, only 6 of 11 budgeted sections were filled. Spending levels during the program year were not adjusted based on this change. As a result, costs in this analysis should be considered high-end estimates because in the long run the college may be able to make adjustments that would decrease the actual cost per participant. This analysis does not capture adjustments that the college may have made beyond the program year.

In addition to the cost of program components, this analysis estimates the cost of other college courses (that is, courses other than the College Success course) using transcript data as well as collegewide financial and enrollment data. For the short term, the cost of other college courses per sample member is estimated by multiplying the number of college credits attempted at Chaffey College per sample member by the Chaffey collegewide cost per credit. For the long term, the cost of other college courses per sample member is estimated by multiplying the number of college credits attempted at any California two-year public college by the Chaffey collegewide cost per credit.

The cost per credit used to calculate the total cost of other college courses is estimated to be \$234 for the 2006-2007 academic year.¹ It is estimated by dividing the Chaffey College operating budget (including fringe benefits) by the number of credits taken at Chaffey.² The number of credits taken at Chaffey is estimated by multiplying the number of full-time equivalent (FTE) students at Chaffey by 30, which corresponds to the California Community College Chancellor’s Office (CCCCO) definition of an FTE student.³ The cost per credit for each

¹Once a cost per credit is estimated, the cost of college credits (other than the College Success credits) is assumed to be the same (\$234 per attempted credit) for both the program and control group members.

²The cost of Enhanced Opening Doors is excluded from the operating budget just as Enhanced Opening Doors credits are excluded from the number of credits taken during that period. The operating budget is taken from an analysis of Chaffey College’s 2006-2007 finances by Economic Modeling Specialists Inc.; see www.chaffey.edu/research/IR_PDF_Files/Planning_Documents/EconomicContribution-MainReport.pdf (Robison and Christophersen, 2008).

³The number of FTE students at Chaffey is taken from the CCCCCO Web site. See CCCCCO (2011a, 2011b).

follow-up year is estimated by adjusting the 2006-2007 academic year value by the Higher Education Price Index for two-year public colleges and by an annual discount rate of 3.5 percent.⁴ As a result, the cost per credit is \$234 in the first year of follow-up, \$233 in the second year of follow-up, \$237 in the third year of follow-up, and \$230 in the fourth year of follow-up. The Chaffey College cost per credit appears to be typical of California two-year public colleges, which is why this analysis applies the Chaffey College cost per credit to credits attempted at any California two-year public college.

Analysis

The sections that follow include more detailed discussion of the short-term and long-term costs of the Enhanced Opening Doors program at Chaffey College.

Cost of Enhanced Opening Doors

Table 5.1 summarizes the short-term (the two program semesters) cost analysis findings. The Enhanced Opening Doors program components cost \$1,623 per program group member. The first-semester College Success course made up 58.5 percent (\$949 per program group member) of the cost associated with the program. The second-semester College Success course was also a substantial cost, representing 21.5 percent (\$349 per program group member) of the program cost. The remaining cost is related to enhanced services that are offered to the program group; these include enhanced Success Centers, enhanced counseling, and the program textbook voucher.

Every student at Chaffey is apportioned a basic cost for Success Centers (estimated to be \$110 per sample member); this value is captured in the cost of “Other college courses” and is not independently visible in Table 5.1. For Enhanced Opening Doors, a staff person was added to coordinate Success Center activities for program group members. On a per program group member basis, the cost of this coordinator was \$119. As a result, the total investment in Success Centers (\$110 plus \$119) is roughly two times greater per program group member (\$229) than it is per control group member (\$110).

Similar to the cost of Success Centers, the total investment in counseling per sample member is not independently visible in Table 5.1. The first \$42 of counseling per program group member (also not shown in Table 5.1) is captured in the cost of “Other college courses.” Student-to-counselor ratios were lowered for the Enhanced Opening Doors program, at an additional cost of \$147 per program group member, for a total of \$189 (\$147 plus \$42) per program group member for counseling. By comparison, the total cost of counseling per control

⁴Moore et al. (2004).

The Opening Doors Demonstration

Table 5.1

**Net Cost of Enhanced Opening Doors at Chaffey College
During the Two Program Semesters
Chaffey College Four-Year Follow-Up Report**

Feature	Program Group	Control Group	Difference (Net)
Program components (\$)			
First-semester College Success course	949	6	943
Second-semester College Success course	349	0	349
Enhanced services			
Enhanced Success Centers	119	1	118
Enhanced counseling	147	1	146
Program textbook voucher	60	0	59
Subtotal	1,623	8 ^a	1,615
Other college courses ^b (\$)			
First semester	1,296	1,692	-396
Second semester	1,400	1,326	74
Subtotal	2,697	3,019	-322
Total (\$)	4,320	3,027	1,293

SOURCES: MDRC calculations from Chaffey College transcript and budget data.

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

Tests of statistical significance were not performed.

Program costs are based on a steady state of operation that excludes research and start-up costs.

^aOne member of the control group received the program treatment in the first semester, so rather than \$0, program component costs are slightly above \$0.

^bIncludes the cost of usual services such as counseling and Success Centers.

group member is \$39.⁵ As a result, the total investment in counseling is nearly five times greater per program group member (\$189) than it is per control group member (\$39).

The smallest component of the Enhanced Opening Doors program was the program textbook voucher. Approximately 3.7 percent (\$60 per program group member) of the program cost was associated with textbooks.

⁵The cost of usual services is estimated per credit and is the same for program and control group members. Differences in enrollment affect the average number of credits taken per sample member, so the dollar amount associated with counseling that is captured in the cost of “Other college courses” in Table 5.1 is slightly different for members of the program group (\$42) and the control group (\$39).

In addition to the Enhanced Opening Doors College Success course, program group members took other courses at Chaffey. These other courses mostly represent their usual course load with a minor offset to fit the Success Course into their schedules. That is, beyond the required College Success course, students in the program group attempted an average of 5.5 other credits in the first program semester and 6.0 other credits in the second program semester. For program group members, the cost of these other courses was \$1,296 in the first semester and \$1,400 in the second semester.

Over the long term (looking at all four years of follow-up), the total cost per program group member increases to \$9,567 (discussed in more detail later in the chapter). During this period, the cost of the Enhanced Opening Doors program components remains unchanged from the first two semesters at \$1,623. The remaining \$7,943 of the long-term cost is associated with other college courses attempted at any California two-year public college by program group members.⁶

Cost of Usual Services

In the short term (for the two program semesters only), a typical member of the control group had an estimated cost of \$3,027, as presented in Table 5.1. Because control group members were not eligible to receive the enhanced services that were provided as part of the Enhanced Opening Doors program, essentially all of this cost — over 99 percent (\$3,019 per control group member) — was associated with other college courses.⁷ Specifically, students in the control group took an average of 7.2 other credits in the first program semester and 5.7 other credits in the second program semester (not shown); the cost of these other courses was \$1,692 in the first semester and \$1,326 in the second semester.

Over the long term (looking at all four years of follow-up), the cost per control group member increases to \$8,541 (discussed in more detail later in the chapter). During the four-year follow-up period, the minute cost that was originally associated with Enhanced Opening Doors program components remains unchanged from the two program semesters. Nearly all of the cost associated with control group members is associated with other college courses. During the

⁶The cost of other college courses is estimated by multiplying the number of credits attempted at any California two-year public college by the 2006-2007 cost per credit after discounting and adjusting for inflation. Inflation adjustment is based on the Higher Education Price Index inflation estimates for two-year public colleges. The discount rate is 3.5 percent.

⁷One control group member received Enhanced Opening Doors services, so rather than \$0 in the panel showing program component costs, the costs are virtually \$0.

four years of follow-up, the average control group member attempted \$8,535 worth of other college courses at any California two-year public college.⁸

Net Cost

In the short term, as highlighted in Table 5.1, the net cost of the program components is \$1,615 per program group member. When combined with the cost difference associated with other college courses, the total net cost of the two program semesters was \$1,293 per program group member. Specifically, in the first semester, the cost of other college courses attempted at Chaffey College per control group member was \$396 greater than the cost per program group member. In the second semester, the direction of this difference changed, as the cost of other college courses attempted at Chaffey College per program group member was \$74 greater than the cost per control group member.⁹

As observed earlier, over the long term, when the entire four-year follow-up period is considered and when costs at any California two-year public college are included, the cost per program group member is estimated to be \$9,567, and the cost per control group member is \$8,541. These estimates demonstrate that the cost for the typical program group member was \$1,023 more than the cost for the typical control group member during the four years of follow-up. During that period of time, the typical control group member attempted two and a half credits more than the typical program group member (excluding Enhanced Opening Doors College Success course credits); the estimated value of this difference is \$592 per program group member.¹⁰ This difference offset the net cost of the program components shown in Table 5.1 (\$1,615) and resulted in a long-term net cost of \$1,023 per program group member.

⁸The \$8,535 is derived by multiplying the number of credits attempted (by year) by the corresponding cost per credit. Cumulative credits attempted by year are shown in Appendix Table A.2.

⁹Why is the cost of other college courses for the control group greater than the program group in the first semester but not in the second? During the first semester, program group members were told that they had to enroll in the College Success course, and, as a result, many of them took fewer other college courses. As exhibited by the control group, in the absence of the Enhanced Opening Doors program, a typical probationary student in this study would take more non-College Success (“other”) courses if he or she were not mandated to participate in the Success Course. However, the decreased enrollment in other college courses is not directly proportional to the increased enrollment in the College Success course, because program group members did not *always* decrease their participation in other college courses as a result of their participation in the College Success course. In the second semester, program group members were not required to take the College Success course, so they returned to a more “normal” level of attempted credits in other college courses. At that point, program group members actually began taking more “other” courses than control group members. A portion of this difference in attempted credits is attributable to a higher rate of enrollment for the program group.

¹⁰During the four years of follow-up, control group members attempted more credits than did program group members. However, program group members still earned more credits during that time. This difference is possible because program group members earned 62 percent of their attempted credits while control group members earned 52 percent of their attempted credits.

Cost Implications of Alternative Scenarios

Sensitivity analysis provides information about the degree to which results are sensitive to changes in underlying assumptions. Conducting a sensitivity analysis involves varying important or uncertain assumptions, and then examining the impact that these changes have on the results. This sensitivity analysis adjusts multiple variables in order to answer three questions: How much would the net cost of the program change if revenue associated with a higher enrollment rate for the program group was considered? How much would the net cost of the program change if the cost per Enhanced Opening Doors credit (that is, a College Success course credit) equaled the cost of a typical credit (that is, a credit from any course other than the College Success course) at Chaffey College? And, how much would the net cost change if the second-semester College Success course was dropped from the intervention?

Higher Enrollment Rate for the Program Group

- **How much would the net cost of the program change if revenue associated with a higher enrollment rate for the program group was considered?**

The primary analysis presented in this chapter does not estimate the revenue associated with higher rates of enrollment, although during both program semesters the program group had higher rates of enrollment at Chaffey than did the control group (as shown earlier in Table 3.1).¹¹ As a result, increased enrollment among the program group (a desirable occurrence) increased the cost per program group member, making the program more expensive. Assuming that students represent both costs and revenues to a college, it is reasonable to offset the program cost with an estimate of the revenue associated with increased enrollment. The revenue associated with increased enrollment was \$92 per program group member in the first semester plus \$170 in the second semester.¹² This offset, then, lowers the net cost per program group member by \$262, which results in a short-term net cost of \$1,031 (program cost of \$1,293 minus revenue of \$262) and a long-term net cost of \$761 (program cost of \$1,023 minus revenue of \$262).¹³

¹¹During the first semester, 85.3 percent of program group members compared with 80.9 percent of control group members enrolled in classes at Chaffey. During the second semester, 67.0 percent of program group members compared with 59.6 percent of control group members enrolled in classes at Chaffey. These values are slightly different from the values shown in Table 3.1 because the second-semester values there include summer 2007 data, which are excluded in this chapter.

¹²These values are based on enrollment differences between program and control group members at Chaffey College during the two program semesters only. See CCCCCO (2009).

¹³The revenue associated with a higher rate of enrollment for the program group is estimated by multiplying the percentage point difference in enrollment between the program and control groups by the average number of total credits attempted (including the College Success course and other college courses) per enrolled program group member. Then, that value is multiplied by the revenue per credit that the college receives, (continued)

Adjusting the Cost of the Program Credit

- **How much would the net cost of the program change if the cost per Enhanced Opening Doors credit equaled the cost of a typical credit at Chaffey College?**

As noted earlier, enrollment shortfalls caused Enhanced Opening Doors costs to appear higher than they might under different circumstances.¹⁴ The estimated cost per College Success credit is \$590. This is approximately two and a half times the typical cost per credit at Chaffey College, which equals \$234. If the college is able to make adjustments to the College Success course that bring its cost in line with other classes at Chaffey, the short-term net cost per program group member would decrease from \$1,293 to \$317, while the long-term net cost would fall from a cost of \$1,023 to a cost of less than \$50. A cost reduction of this magnitude may be too extreme to implement immediately, but the fact that such an adjustment can produce such a large shift illustrates that significant cost reductions may be possible.

Eliminating the Second-Semester College Success Course

- **How much would the net cost change if the second-semester College Success course was dropped?**

As implemented, Enhanced Opening Doors was a two-semester program. Program group members were told that they were required to enroll in the Student Success course for the first semester, which resulted in a high rate of participation (72 percent) and more intensive treatment than control group members experienced. Program group students were encouraged, but not required, to enroll in the course for the second semester. The second-semester participation rate was 29 percent. As a result of this fall-off in participation in the second semester, that portion of the program was more expensive per participant because budgeted resources were not reallocated in response to actual enrollment. However, following the evaluation, Chaffey College chose to drop the second-semester course from the program in light of the low enrollment during the study period. If the second-semester intervention (that is, the College Success course) is dropped from the program, the net short-term cost per program group member decreases from \$1,293 to \$944, and the long-term cost per program group member falls from \$1,023 to \$674.

which is assumed to equal the collegewide cost per credit. As a result, the revenue per credit is greater than just tuition and state aid received per credit. However, roughly two-thirds of Chaffey revenue is estimated to be purely determined by formula. Therefore, if the analysis was adjusted so only computational revenue was used to estimate the revenue associated with increased retention, then the revenue received per credit would equal roughly \$153 and the net cost per program group member would be \$1,121. See CCCCCO (2009).

¹⁴Enrollment among program group members fell short of the target in the original program budget.

Cost-Effectiveness

A cost-effectiveness analysis compares costs and impacts in order to answer the question, “How effective was each dollar at changing the outcomes we care about most?” To illustrate the effectiveness of investing in the Enhanced Opening Doors program, this section puts program and control costs in terms of cost per outcome. Table 5.2 summarizes the short-term costs and short-term outcomes, while Table 5.3 presents long-term costs and long-term outcomes. Comparing program costs with key outcome measures helps identify what the program does well and what it does not do well.

Short-term cost-effectiveness compares Chaffey College costs during the two program semesters with three key outcome measures: (1) achieving good academic standing, (2) total credits earned, and (3) degree-applicable and developmental credits earned. The cost-effectiveness of the Enhanced Opening Doors program compared with the standard college services changes depending on which outcome measure is considered most important.

When short-term program costs are considered in terms of students achieving good academic standing, the program is cost-effective because program group members were nearly twice as likely to move into good academic standing as were control group members (30.4 percent compared with 15.9 percent, respectively); this observed difference is statistically significant at the 1 percent level. As a result of this difference, the cost per program group student to achieve good academic standing during the program year (about \$14,200) was 25 percent less expensive than the cost per control group student to achieve good academic standing (\$19,037).

When short-term program costs are considered in terms of total credits earned during the two program semesters (that is, including credits from the College Success course, developmental education courses, and degree-applicable courses), the program is slightly cost-effective because program group members typically earned more credits, which resulted in a slightly lower cost per credit earned for program group members compared with the cost for control group members. Specifically, the program group cost per credit earned (\$516) was 3 percent less expensive than the control group cost per credit earned (\$530).¹⁵ The difference in total credits earned is statistically significant at the 1 percent level.

The cost-effectiveness of earning credits fades away when only degree-applicable and developmental credits are considered. Specifically, during the two program semesters, the cost per degree-applicable and developmental credit earned for program group members (\$797) was

¹⁵This difference is driven by earned credits relative to attempted credits: program group members earned 59 percent of their attempted credits, while control group members earned 44 percent of their attempted credits during the program year.

The Opening Doors Demonstration

Table 5.2

**Cost-Effectiveness of Enhanced Opening Doors at Chaffey College
During the Two Program Semesters**

Chaffey College Four-Year Follow-Up Report

Outcome	Program Group	Control Group	Difference (Impact)
Cost per sample member, first two semesters (\$)	4,320	3,027	1,293
Academic standing			
Ever in good academic standing (%)	30.4	15.9	14.5 ***
Cost per sample member in good academic standing (\$)	14,210	19,037	-4,827
Cumulative credits			
Credits earned	8.4	5.7	2.7 ***
Cost per credit earned (\$)	516	530	-13
Cumulative degree-applicable and developmental credits ^a			
Credits earned	5.4	4.8	0.7
Cost per credit earned (\$)	797	635	162
Sample size (n = 444)	224	220	

SOURCES: MDRC calculations from Chaffey College transcript and budget data.

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

For academic outcomes, a two-tailed t-test was applied to differences between research groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent. Estimates are adjusted by round of random assignment.

Significance tests were not conducted for cost-effectiveness measures.

Program costs are based on a steady state of operation that excludes research and start-up costs.

^aIncludes credits earned in courses taken during the first two semesters of the study and excludes credits from the College Success course. If a student receives a letter grade in a course, this measure only includes credits in which the student earned a “C” or higher. If a student takes a class “pass/fail” or if the class is only offered “pass/fail,” then this measure only includes a grade of “pass.”

26 percent higher than the same type of cost for control group members (\$635).¹⁶ The difference between program and control group members in degree-applicable and developmental credits earned is not statistically significant. The program is not cost-effective in the short term when costs are compared with degree-applicable and developmental credits earned because the estimated impact on this outcome measure was not substantial enough to offset the initial investment in the program.

¹⁶During the two program semesters, the typical program group member earned 5.4 degree-applicable and developmental credits, while the typical control group member earned 4.8 such credits.

The Opening Doors Demonstration

Table 5.3

**Cost-Effectiveness of Enhanced Opening Doors at Any Public,
Two-Year California College, Years One Through Four
Chaffey College Four-Year Follow-Up Report**

Outcome	Program Group	Control Group	Difference (Impact)
Cost per sample member, first four years (\$)	9,567	8,541	1,026
Cumulative degree-applicable and developmental credits ^a			
Credits earned	18.4	17.1	1.4
Cost per credit earned (\$)	519	500	19
Sample size (n = 444)	224	220	

SOURCES: MDRC calculations from Chaffey College transcript and budget and California Community College Chancellor's Office data.

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

A two-tailed t-test was applied to differences between research groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

Estimates are adjusted by round of random assignment.

Program costs are based on a steady state of operation that excludes research and start-up costs.

The long-term cost is estimated by adding the cost of the program and the cost of all other credits attempted. The cost of other college courses is estimated by multiplying the number of credits attempted at any California two-year public college by the 2006-2007 cost per credit after discounting and adjusting for inflation. Inflation adjustment is based on the Higher Education Price Index inflation estimates for two-year public colleges. The discount rate is 3.5 percent.

^aIncludes credits earned in courses taken during years one through four of the study and excludes credits from the College Success course. If a student receives a letter grade in a course, this measure only includes credits in which the student earned a "C" or higher. If a student takes a class "pass/fail" or if the class is only offered "pass/fail," then this measure only includes a grade of "pass."

Long-term cost-effectiveness compares costs from any California two-year public college with the number of degree-applicable and developmental credits earned during the four years of follow-up. In general, long-term impacts were not statistically significant. As a result, long-term differences between the program group and the control group may not be a product of the intervention and may simply reflect differences that arose by chance. Other long-term outcome measures, such as earning a degree or certificate, are not discussed in this section because the estimated impacts are not significant, and the outcome levels (for both the program group and the control group) are low.

The program appears to be relatively cost-neutral when long-term costs are compared with degree-applicable and developmental credits earned. Specifically, as shown in Table 5.3, a

typical program group member earned 18.4 credits at an average cost of \$519 per credit earned, while a typical control group member earned 17.1 credits at an average cost of \$500 per credit earned. The estimated difference between program and control group members in degree-applicable and developmental credits earned is not statistically significant; however, if this difference is “real” — that is, not a chance occurrence — then in terms of degree-applicable and developmental credits earned, the program is nearly as effective dollar-for-dollar as the general college experience without the program. The long-term cost per degree-applicable and developmental credit earned, approximately \$510 for both program and control group members, is lower than the short-term cost per degree-applicable and developmental credit earned per group member, which ranged from \$635 to \$797 (Table 5.2). This decrease in cost per credit over time is driven by an increase in the overall rate of earning credits that are attempted. In the first year of follow-up, sample members passed 53 percent of all credits attempted at any California two-year public college. In the fourth year of follow-up, sample members were passing nearly 64 percent of all credits attempted at any California two-year public college.

Implications

Program Costs at Chaffey College Compared with Other Institutions

At Chaffey College, the Success Centers were a pre-existing resource, with costs shared across the entire student body. For Enhanced Opening Doors, a staff member was provided in addition to the usual Success Center services to coordinate activities for members of the program group. Many colleges have a resource similar to the Success Centers at Chaffey College; however, the cost of mounting a program like Enhanced Opening Doors at a school lacking such services would be much higher than was observed at Chaffey College.

Program Funding and Sustainability

Chaffey College contributed the majority of funding (62 percent) for the Enhanced Opening Doors program. The other 38 percent came from outside grants. The substantial contributions from Chaffey made it easier for the college to continue operating the program when grant funds ran out. The program is still in operation today; however, it now exists as a one-semester, three-credit intervention. The second-semester, two-credit College Success course is no longer offered. Additionally, the Enhanced Opening Doors program seems to include a number of fixed costs that would not change substantially if the program were moderately expanded. For instance, the cost of the Success Centers would not change if program participation increased moderately, nor would the cost of a counselor dedicated to the program. As a result, expanding the number of students who take the Enhanced Opening Doors course would improve the overall cost-effectiveness of the program because fixed costs would

be spread across more students. Chaffey has attempted to do this by institutionalizing the program as part of the probation process. Another way to increase participation and achieve economies of scale would be to mandate participation. Participation levels were substantially higher in the first program semester, when students were told that participation was mandatory, than they were in the second semester, when participation was optional.

Conclusion

The Chaffey Enhanced Opening Doors program had a short-term net cost of about \$1,300 per program group member and a long-term net cost of about \$1,020 per program group member. There seem to be multiple reasonable approaches to decreasing these costs. Such changes include dropping the second-semester College Success course, adjusting spending based on actual enrollment, and including revenue from increased enrollment.

When the cost is considered in comparison with outcomes, the Enhanced Opening Doors program produces mixed results in the short term and was likely cost-neutral over the long term. Notably, the program was cost-effective at moving students into good academic standing in the short term. Additionally, the cost per earned credit during the two program semesters was slightly lower for program group members compared with control group members, but this positive observation is seen only when all credits are considered, and fades away when considering only degree-applicable and developmental credits. Finally, impacts on key long-term outcomes, such as degree-applicable and developmental credits earned, were not statistically significant. As a result, the program was not able to display definitive cost-effectiveness over the long term; it seems more likely that the program is simply cost-neutral, meaning that over the long term, the cost per key outcome is essentially the same with or without the program.

Chapter 6

Summary and Conclusions

This report presents the key short- and long-term educational effects of the Enhanced Opening Doors program at Chaffey College in Rancho Cucamonga, California. The Enhanced Opening Doors program targeted a very specific subpopulation at the college: students on probation. These are students who, owing to poor grades or inadequate academic progress, were identified by the school as being at high risk of not graduating. The program sought to get these students back on track by telling them that they were required to take a “College Success” course, taught by a college counselor, which provided basic information on study skills and the requirements of college. As part of the course, students were expected to visit the college’s “Success Centers” — which were established at Chaffey in response to the school’s recognition that many of its entering students were not prepared for college-level work, and where students could receive supplementary individualized or group instruction in math, reading, and writing.

This random assignment study of the Enhanced Opening Doors program reports on the effectiveness of the program compared with Chaffey College’s usual services for probationary students. It is critical to recognize this fact when interpreting the findings presented in this report. Students who were randomly assigned to the control group received Chaffey College’s regular services (which are available to all Chaffey students), including the opportunity to take classes with Chaffey’s dedicated faculty, the opportunity to receive advising from Chaffey’s committed counselors, and so forth. Therefore, the impact of Enhanced Opening Doors represents the value that the program added above and beyond Chaffey’s usual services.

During the year in which the Enhanced Opening Doors program ran, its impacts were promising. On average, students in the program outperformed their control group counterparts with respect to total credits earned, grade point average (GPA), and good academic standing. However, there were indications that longer-term follow-up was necessary to provide a more meaningful picture of the program’s effectiveness. For example, while the program had a positive impact on total credits earned during the first year of the study — including credits that were applicable toward a degree and those that were not — this impact was driven largely by the College Success course, which does not offer degree-applicable credits and thus does not directly help students progress toward a degree. Similarly, the program’s positive impact on GPA during the first year of the study is attenuated (although still positive and significant) when the College Success course is not included in the GPA calculation. Nonetheless, the hope of the program’s designers is that the habits and study skills developed in the College Success course lead to longer-term success in other classes. In addition, program group students who took the three-credit College Success course, which required time and effort to complete, did not fall

behind control group members in degree-applicable plus developmental credits earned, indicating that the program seemed to be on track. The one-year findings show definite promise, but also a degree of uncertainty.

The study team continued to track the sample for four years after students entered the study, and those findings are reported here. With four years of follow-up, any positive effect of the program would be expected to translate into students making more progress toward a degree with respect to degree-applicable credits, which students must earn in order to graduate, as well as developmental credits, which students are encouraged to earn before they enroll in certain degree-applicable courses. The evidence from this study does not confirm that the program has positive, long-term effects (compared with Chaffey College's regular services) with respect to credit accumulation, continued enrollment, or attainment of a degree or certificate. In general, four years after students entered the study, the program group's outcomes are quite similar to those of the control group. After four years, program group members maintain their edge in total credits earned, but this impact remains a result of the three-credit College Success course that students took during the first semester of the study, which does not help move them toward earning a degree or certificate. Strikingly, four years after the study began, only 7 percent of all students in the study (in both the program and control groups) had earned a degree or certificate, and 44 percent of the sample were still enrolled in some school (with 21 to 22 percent still at Chaffey College).

The Opening Doors Program in 2011

In part as a result of the documented short-term success of the Enhanced Opening Doors program and in part in recognition of the college's willingness to reflect on the effectiveness of one of its own programs, Chaffey College's Enhanced Opening Doors program was named one of three winners of the 2010 MetLife Foundation Community College Excellence Award. This prestigious award is a point of pride for staff at Chaffey College, as is the continued Enhanced Opening Doors program.

As of fall 2011, Chaffey College's Enhanced Opening Doors program continues to operate, evolve, and grow. In terms of program evolution, several changes have occurred since the MDRC study of the program was conducted. First, the target population has changed. The Enhanced Opening Doors program described in this report targeted program students in their first, second, or third semester on probation. Since that time, the program has focused its efforts on "Level 2" probationary students — that is, students who are in their second semester on probation. (Level 2 probation students represent about one-fourth to one-third of all students on probation, depending on the year or semester.) This change was based on college staff members' belief that not all students require the more intensive Enhanced Opening Doors program; in fact, according to an Enhanced Opening Doors coordinator and counselor, many students

who are in their first semester on probation manage to regain their good academic standing without the program.

A second shift is that, whereas the Enhanced Opening Doors program tried to operate back-to-back College Success courses over two semesters, the program now includes a single, one-semester College Success course that combines the two-semester curriculum from the old courses. The second-semester College Success course was not well attended during the MDRC study, and eliminating this course should produce significant cost savings to the college.

In terms of program growth, despite limiting the target population to Level 2 probationary students, the number of students served by the Enhanced Opening Doors program has increased since the fall 2006 cohort enrolled. Figure 6.1 plots, from fall 2007 through fall 2010, the number of students on Level 2 probation, the number of students who attended an information session on Enhanced Opening Doors, and the number of students who signed a contract to participate in the Opening Doors program. The number of students on Level 2 probation has oscillated during that time period, ranging from 700 to 900; meanwhile, the number of students served by the program has nearly doubled, from just over 200 in fall 2007 to just under 400 in fall 2010, when the program served over 50 percent of all Level 2 probationary students.

In addition to the expansion of the program within Chaffey College, at least one other California college is replicating Chaffey's Enhanced Opening Doors program. Chaffey's program staff members have been leading in-service training for staff members at the replication college.

Since the fall of 2006, the Enhanced Opening Doors program at Chaffey has continued to expand and evolve in order to attempt to improve the college's services for its probationary students. The college staff members continue to work hard and experiment with new ideas. With the long-term results of the Opening Doors study provided in this report, now is a good time to explore the options for probationary students in the future.

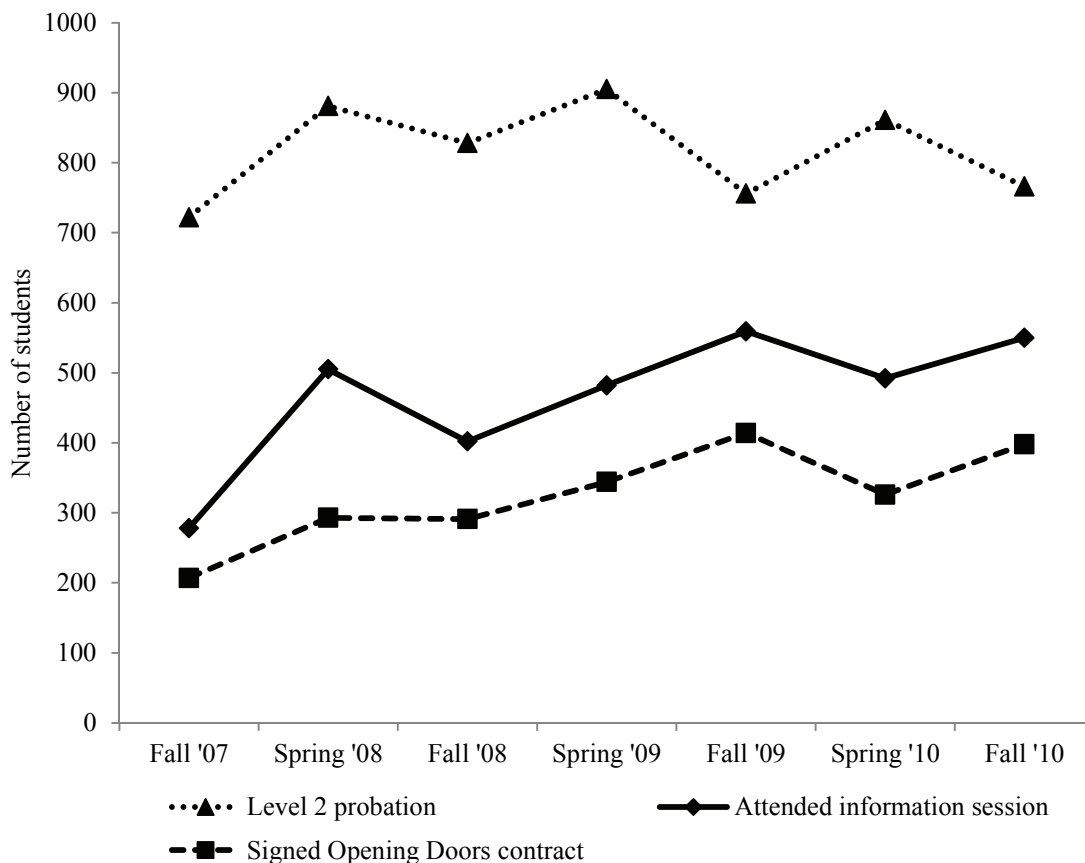
Exploring Options for Probationary Students

This report examines the effectiveness of a program that was designed to improve academic outcomes for students on probation owing to poor grades or inadequate academic progress. As might be expected, the long-term academic outcomes for these at-risk students are particularly low. Four years after this study began, the rate of receipt of a degree or certificate was well below 10 percent, and around 45 percent of students in the study were either still enrolled or had earned a degree or certificate. Since these students were already on probation when the study began, they all had been in school for at least a year; in fact, on average, students in this study had been in college, on average, for 3.56 semesters prior to the study's start. In other words, the

The Opening Doors Demonstration

Figure 6.1

Enhanced Opening Doors Program Participation, Fall 2007 to Fall 2010 Chaffey College Four-Year Follow-Up Report



SOURCE: MDRC field research data.

NOTES: If students have been on academic or progress probation for the last two semesters in which they have been enrolled, they are placed on “Level 2 probation.”

Students on Level 2 probation are required to attend an information session on the Opening Doors program before they can register for classes. “Attended information session” refers to the number of students who attended this mandatory information session.

degree/certificate attainment figures are not four-year graduation rates, but are closer to five- or six-year graduation rates. This gives reason to pause and reflect on the options that Chaffey College and others have for best serving probationary students. Several options are given below, although this list is in no way exhaustive.

- **Place greater emphasis on early intervention.**

As noted above, since the fall 2006 cohort of students experienced Chaffey's Enhanced Opening Doors program, several changes have been made. One change is that the program now targets students in their second semester of probation, as opposed to all probationary students. As described by a Chaffey staff member, the reason for this change is that many students in their first semester on probation manage to get off of probation without a targeted intervention. Given the low rates of success among students in this study (including those who began in their first semester on probation), it is likely that students in their first semester on probation are not successfully completing the requirements for a degree or certificate in a timely fashion, even if they successfully move off of probation. As a result, Chaffey and other colleges might consider targeting interventions at students who are getting off track even earlier, before they have had a chance to dig too deep a hole for themselves. Colleges may want to keep track of indicators that students are at risk of dropping out even before they are ever placed on probation. Early intervention has become a mantra in early childhood research, and a similar focus has emerged in attempts to reduce drop-out rates in high schools, where "early warning indicator systems" are popular.¹ Identifying and assisting students who are likely to end up on probation may be a good way to prevent students from ever ending up on probation in the first place. Doing so first requires identifying key indicators that students are at risk, which can enable the targeting of resources to those students before it may be too late. Likely the greater challenge rests in knowing what to do once high-risk students have been identified. Unfortunately, there is only a limited body of rigorous evidence on program effectiveness, and an even more limited body of evidence on programs that lead to increases in degree or certificate attainment, so there is much more work to be done on creating, testing, and evaluating potential solutions.

- **Retool the program.**

Through their work on the Enhanced Opening Doors program, staff members at Chaffey have developed a national reputation as innovators willing to test out new ideas and continually improve upon the parts of their programs that appear to work, while eliminating the parts that are less effective. Although this follow-up study suggests the limited long-term success (with respect to academic outcomes) of the Enhanced Opening Doors program, Chaffey is already seeking ways to better serve its students. The college has eliminated the second-semester College Success course, which had limited participation and was relatively costly. The college is also working to improve the services offered at the Success Centers, including attempting to make "counselor apprentices" available to meet with students, do progress and graduation checks with them to make sure they are on track to graduate on time,

¹Neild (2009); www.princeton.edu/futureofchildren/publications/docs/19_01_04.pdf.

and instruct students on how they can continue to audit their own progress. In addition, instructors in some of the college's "foundation courses" (for example, developmental reading) now *require* students to spend a certain number of hours in the Success Centers, a relatively inexpensive course add-on for a college that already has the centers in place, including a system for tracking students' use.

While it was expected that the Enhanced Opening Doors program's College Success course and required visits to the Success Centers would lead students to form the habit and routine of visiting the Success Center even after the program was complete, this expectation did not play out in reality. As a result, if Chaffey staff members believe that visiting the Success Centers is valuable for all probationary students, they might consider extending the required visits beyond the program semester(s).

- **Be more assertive about dismissing students who are on probation.**

One other option for colleges to consider is being more assertive in dismissing students who are on probation. Many factors should weigh into this very difficult decision, two of which are the college's mission and level of resources. Resources are always limited and are especially scarce in the current fiscal climate in a state like California. Colleges must therefore decide whether and how many resources they are willing to dedicate to students whose need may be the greatest, but whose likelihood of success may be the lowest. A program like Chaffey's Enhanced Opening Doors program costs around \$944 per student as a one-semester intervention, but, for example, eliminating the College Success course and only requiring visits to the Success Centers might yield similar results at a lower cost. These are difficult decisions to consider, but ignoring or not acknowledging them has consequences. Perhaps some probationary students would be better served by other education and training services in the community that offer different or more intensive supports, such as the federally funded Job Corps program; perhaps others might consider taking time off to resolve any personal barriers that are interfering with school.

For some students, the expected long-term financial benefits of community college might no longer be positive when their likelihood of graduating drops to extremely low levels. Given the opportunity cost and cost of attendance,² at some point a student's likelihood of earning a degree may be low enough that the expected economic return of attending school is negative. While the mission of most colleges is greater than economic returns to credit accumulation and degree attainment, economics may be one factor that influences many colleges' policies for dealing with students who are unlikely to graduate. Of equal importance, information regarding the expected financial returns of continued enrollment may influence students'

²The cost of attendance is so small in California that this is likely not a large factor.

interest in continuing to pursue a degree. Unfortunately, little guidance is available to determine whether (or at what level) a student's probability of graduating can be expected to yield a negative financial return.

The above discussion brings up just a few considerations that college staff might want to keep in mind as they continue to struggle with the best way to serve probationary students.

Conclusion

Chaffey College is one of a small but growing group of colleges in the United States that has been willing to subject one of its programs to a rigorous, random assignment evaluation — the gold standard design in evaluation research. Because of the college's commitment to serving its students as well as possible, the staff at Chaffey were eager to know how effective the Enhanced Opening Doors program was compared with the college's regular services for probationary students. Their willingness to participate in this study should be applauded, as it enables them to better serve their students and provides other college administrators, policymakers, and researchers with trustworthy information and evidence that can be used to guide decisions. Although the evaluation yielded no strong evidence that the Enhanced Opening Doors program has long-term outcomes that are significantly different from those produced by Chaffey's usual services, the college and policymakers can take away some other lessons from this study.

For example, the Opening Doors study at Chaffey College began as a study of one program (the Opening Doors program), and that program evolved into a stronger second program (the Enhanced Opening Doors program). A prior MDRC report describes the differences and evolution in detail, but one of the main take-aways in the development of both programs was a simple change in language, which seemed to have effects on program participation and short-term program impacts.³ Low rates of participation in the College Success course in the original program led Chaffey administrators to require participation in the College Success course in the Enhanced Opening Doors program, and they told students that their registration would be blocked if they did not comply. This seemingly subtle change in policy, from encouragement to requirement, was associated with a large improvement in program participation.⁴ Individuals who are at the greatest risk of failure may also be the least likely to participate in programs that are designed to help them succeed. College administrators must weigh their desire to allow their students autonomy and decision-making power against the fact that doing so may reduce participation in the very programs that are created for their benefit. Clearly, this a difficult

³Scrivener, Sommo, and Collado (2009).

⁴The word "associated," rather than "caused," is used here intentionally. The study at Chaffey never randomly assigned students to an "encouraged to participate" condition and a "required to participate" condition. It is possible that other factors led to the observed increase in participation rates.

balance to achieve — requiring individuals to participate in a program without their buy-in can backfire, yet allowing complete flexibility, especially when dealing with students who have a low likelihood of success, may not be in the students’ best interest.

A final lesson that is emerging from a number of community college studies is that one- and two-semester interventions may not be sufficient to make a lasting difference.⁵ Students often do better while they receive interventions, but the impacts fade once the interventions end. While it is not realistic — and probably not advisable — for interventions to last indefinitely, program operators might consider whether they can do more to help students make a smooth transition to regular college services once an intervention like Enhanced Opening Doors ends. For example, program operators might place greater emphasis on mapping out what courses students should take in subsequent semesters, and conducting periodic follow-up to make sure that students remain on track and have not encountered new barriers to success. Some experts have suggested that community colleges need to institute better policies and create clearer pathways that will help all students earn a certificate or degree as quickly as possible.⁶ Some promising new initiatives, such as the City University of New York’s Accelerated Study in Associate Programs (ASAP),⁷ and the Bill and Melinda Gates Foundation’s Completion by Design Initiative,⁸ are aspiring to do just that, and may soon offer lessons on how this might be achieved.

⁵See, for example, Scrivener and Weiss (2009); Weissman et al. (2011).

⁶See, for example, Jenkins (2011); Postsecondary Success Team (2010).

⁷See www.cuny.edu/academics/programs/notable/asap/about.html.

⁸See www.completionbydesign.org/.

Appendix A

**Sample Characteristics at Baseline, by Research Group,
and Supplementary Four-Year Impact Tables**

The Opening Doors Demonstration

Appendix Table A.1

Selected Characteristics of Sample Members at Baseline, by Research Group,
Enhanced Opening Doors Study

Chaffey College Four-Year Follow-Up Report

Characteristic	Full Sample	Program Group	Control Group
Gender (%)			
Male	38.3	38.8	37.7
Female	61.7	61.2	62.3
Age in years (%)			
18-20	60.6	60.7	60.5
21-25	29.5	29.5	29.5
26-30	5.6	5.4	5.9
31-34	4.3	4.5	4.1
Marital status (%)			
Married	5.8	5.8	5.7
Unmarried	94.2	94.2	94.3
Race/ethnicity ^a (%)			
Hispanic/Latino	54.2	54.3	54.1
Black, non-Hispanic	12.2	13.5	11.0
White, non-Hispanic	21.8	19.2	24.4
Asian or Pacific Islander	6.0	7.2	4.8
Other	5.8	5.8	5.7
Has one child or more (%)	10.8	8.7	12.9
Household receiving any government benefits ^b (%)	12.1	8.7	15.4 **
Financially dependent on parents (%)	51.3	52.7	50.0
Ever employed (%)	92.6	94.2	90.9
Currently employed (%)	74.6	74.5	74.6
Diplomas/degrees earned ^c (%)			
High school diploma	95.7	95.7	95.7
General Educational Development (GED) certificate	3.6	2.9	4.3
Occupational/technical certificate	6.3	6.8	5.8
Date of high school graduation/GED certificate receipt (%)			
During the past year	32.2	31.3	33.0
Between 1 and 5 years ago	50.9	51.7	50.0
More than 5 years ago	17.0	16.9	17.0
Main reason for enrolling in college (%)			
To complete a certificate program	5.8	5.8	5.8
To obtain an associate's degree	24.8	23.8	25.7
To transfer to a 4-year college/university	62.9	64.6	61.2
To obtain/update job skills	2.7	2.9	2.4
Other	3.9	2.9	4.9

(continued)

Appendix Table A.1 (continued)

Characteristic	Full Sample	Program Group	Control Group
First person in family to attend college (%)	30.8	31.1	30.4
Working personal computer in home (%)	90.3	91.7	89.0
Owens or has access to a working car (%)	88.9	89.3	88.5
Language other than English spoken regularly in home (%)	35.6	37.7	33.5
U.S. citizen (%)	93.0	95.2	90.9 *
Respondent born outside U.S. ^d (%)	11.0	11.2	10.9
Respondent or respondent's parent(s) born outside U.S. ^d (%)	50.3	53.0	47.5
<u>Prior academic progress at Chaffey College^e</u>			
Number of semesters enrolled	3.56	3.63	3.49
Number of credits earned	13.5	13.8	13.2
Cumulative GPA	1.4	1.4	1.3
On probation (%)	98.9	98.7	99.1
One semester on probation	48.4	50.0	46.8
Two semesters or more on probation	50.5	48.7	52.3
Sample size	444	224	220

SOURCES: MDRC calculations using Baseline Information Form (BIF) and Chaffey College transcript and probation data.

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

A two-tailed t-test was applied to differences between research groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

^aRespondents who said they are Hispanic/Latino and chose a race are included only in the Hispanic/Latino category. Respondents who are not Hispanic/Latino and chose more than one race are considered multiracial. "Other" includes American Indian/Alaskan Native, multiracial, and other.

^bBenefits include Unemployment/Dislocated Worker benefits, Supplemental Security Income (SSI) or disability, cash assistance or welfare, food stamps, and Section 8 or public housing.

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

^d"U.S." includes Puerto Rico.

^eAs of the start of the program. Includes information from Chaffey from fall 1999 through summer 2006.

The Opening Doors Demonstration

Appendix Table A.2

Credit Accumulation Among Sample Members at Any Public,
Two-Year California College, Enhanced Opening Doors Study,
Years One Through Four and at Baseline

Chaffey College Four-Year Follow-Up Report

Outcome	Program Group	Control Group	Difference (Impact)	Standard Error
Baseline^a				
Credits earned	16.0	17.7	-1.7	1.3
Degree-applicable and developmental credits earned ^b	13.2	14.5	-1.3	1.1
Years 1 through 4				
Cumulative credits attempted				
Year 1	15.9	15.0	0.9	1.0
Year 2	25.4	25.0	0.4	1.7
Year 3	31.8	31.4	0.4	2.3
Year 4	36.7	36.5	0.2	2.9
Cumulative degree-applicable and developmental credits attempted				
Year 1	13.2	15.0	-1.8 *	0.9
Year 2	22.5	24.8	-2.3	1.7
Year 3	28.9	31.1	-2.2	2.3
Year 4	33.8	36.2	-2.5	2.8
Cumulative credits earned				
Year 1	9.4	6.9	2.5 ***	0.8
Year 2	15.1	12.4	2.7 *	1.4
Year 3	19.2	16.1	3.1 *	1.8
Year 4	22.7	19.1	3.6 *	2.1
Cumulative degree-applicable and developmental credits earned ^b				
Year 1	6.4	5.8	0.6	0.7
Year 2	11.4	10.7	0.7	1.2
Year 3	15.2	14.2	1.1	1.6
Year 4	18.4	17.1	1.4	1.9
Baseline through year 4^a				
Cumulative credits earned	38.7	36.8	1.9	2.6
Cumulative degree-applicable and developmental credits earned ^b	31.6	31.5	0.1	2.3
Sample size (n = 444)	224	220		

(continued)

Appendix Table A.2 (continued)

SOURCES: MDRC calculations from Chaffey College transcript and California Community College Chancellor's Office data.

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

A two-tailed t-test was applied to differences between research groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

Estimates are adjusted by round of random assignment.

Credits earned are based on data from fall 2006 through summer 2010.

^a“Baseline” measures include all course information and credits from fall 1999 through summer 2006.

^bIncludes credits earned in courses taken during the first four years of the study and excludes credits from the College Success course. If a student receives a letter grade in a course, this measure only includes credits in which the student earned a “C” or higher. If a student takes a class “pass/fail” or if the class is only offered “pass/fail,” then this measure only includes a grade of “pass.”

The Opening Doors Demonstration

Appendix Table A.3

Percentage of Sample Members Who Enrolled or Earned a Degree or Certificate at Any U.S. College, Enhanced Opening Doors Study, Years One Through Four

Chaffey College Four-Year Follow-Up Report

Outcome (%)	Program Group	Control Group	Difference (Impact)	Standard Error
Earned a degree or certificate				
Year 1	1.3	0.5	0.9	0.9
Year 2	2.7	1.8	0.9	1.4
Year 3	5.8	5.0	0.8	2.2
Year 4	7.6	6.4	1.2	2.4
Enrolled or earned a degree or certificate				
Year 1	90.6	90.9	-0.3	2.8
Year 2	62.0	63.2	-1.1	4.6
Year 3	52.7	46.8	5.8	4.7
Year 4	45.5	45.5	0.1	4.7
Sample size (n = 444)	224	220		

SOURCES: MDRC calculations from Chaffey College transcript, California Community College Chancellor's Office, and National Student Clearinghouse data.

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

A two-tailed t-test was applied to differences between research groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

Estimates are adjusted by round of random assignment.

Enrollment and credits earned are based on data from fall 2006 through summer 2010. Degree and certificate data are from fall 2006 through spring 2010.

The Opening Doors Demonstration

Appendix Table A.4

Primary Academic Outcomes Among Sample Members, by Length of Time on Probation at Baseline, Enhanced Opening Doors Study, Years One Through Four

Chaffey College Four-Year Follow-Up Report

Outcome	Students on Probation One Semester			Students on Probation Two Semesters or More			
	Program Group	Control Group	Difference (Impact)	Program Group	Control Group	Difference (Impact)	Standard Error
Number of semesters enrolled at any college	4.26	4.04	0.22	4.10	4.08	0.01	0.34
Cumulative degree-applicable and developmental credits earned ^{a,b}	19.5	16.6	3.0	17.4	17.4	-0.1	2.7
Enrolled at any college in year 4 or earned a degree or certificate (%)	42.1	46.9	-4.7	49.2	44.0	5.2	6.6
Enrolled at any college in year 4	41.2	45.9	-4.6	47.4	42.3	5.1	6.6
Earned a degree or certificate	5.4	3.9	1.5	9.8	8.5	1.4	3.8
Sample size (n = 444)	112	102		112	118		

SOURCES: MDRC calculations using Chaffey College transcript and probation, California Community College Chancellor's Office, and National Student Clearinghouse data.

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

A two-tailed t-test was applied to differences between research groups. No statistically significant differences between research groups were observed.

A two-tailed t-test was applied to differences of impacts between subgroups. No statistically significant differences between subgroups were observed.

Estimates are adjusted by round of random assignment.

Enrollment and credits earned are based on data from fall 2006 through summer 2010. Degree and certificate data are from fall 2006 through spring 2010.

^aIncludes credits earned in courses taken during the first four years of the study and excludes credits from the College Success course. If a student receives a letter grade in a course, this measure only includes credits in which the student earned a "C" or higher. If a student takes a class "pass/fail" or if the class is only offered "pass/fail," then this measure only includes a grade of "pass."

^bAt any public, two-year California college.

The Opening Doors Demonstration

Appendix Table A.5

Academic Outcomes Among Sample Members at Chaffey College,
Enhanced Opening Doors Study, Years One Through Four

Chaffey College Four-Year Follow-Up Report

Outcome	Program Group	Control Group	Difference (Impact)	Standard Error
Cumulative number of semesters enrolled				
Year 1	1.53	1.43	0.10	0.07
Year 2	2.31	2.27	0.04	0.13
Year 3	2.82	2.73	0.09	0.17
Year 4	3.15	3.05	0.10	0.21
Enrolled (%)				
Year 1	88.8	88.2	0.7	3.0
Year 2	47.3	52.8	-5.5	4.7
Year 3	32.6	27.7	4.8	4.4
Year 4	21.9	20.9	1.0	3.9
Cumulative credits earned				
Year 1	9.3	6.4	3.0 ***	0.8
Year 2	14.0	10.8	3.2 **	1.4
Year 3	16.6	13.3	3.3 **	1.7
Year 4	18.5	14.9	3.6 *	1.9
Cumulative degree-applicable and developmental credits earned ^a				
Year 1	6.3	5.4	1.0	0.7
Year 2	10.4	9.3	1.1	1.2
Year 3	12.8	11.7	1.1	1.5
Year 4	14.5	13.2	1.3	1.7
Earned a degree or certificate (%)				
Year 1	1.3	0.5	0.9	0.9
Year 2	2.7	0.9	1.8	1.3
Year 3	5.3	3.6	1.7	2.0
Year 4	5.8	5.0	0.8	2.1
Enrolled or earned a degree or certificate (%)				
Year 1	88.8	88.2	0.7	3.0
Year 2	48.6	53.2	-4.6	4.7
Year 3	35.3	28.6	6.6	4.4
Year 4	26.8	23.2	3.6	4.1
Sample size (n = 444)	224	220		

(continued)

Appendix Table A.5 (continued)

SOURCE: MDRC calculations from Chaffey College transcript data.

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

A two-tailed t-test was applied to differences between research groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

Estimates are adjusted by round of random assignment.

Enrollment and credits earned are based on data from fall 2006 through summer 2010. Degree and certificate data are from fall 2006 through spring 2010.

^aIncludes credits earned in courses taken during the first four years of the study and excludes credits from the College Success course. If a student receives a letter grade in a course, this measure only includes credits in which the student earned a "C" or higher. If a student takes a class "pass/fail" or if the class is only offered "pass/fail," then this measure only includes a grade of "pass."

Appendix B
Measure Creation

This appendix gives details on how academic outcome measures used in this report were created. In particular, the process of combining data sources and the definition of time periods, such as semester and year, are described. These data processing decisions pertain most closely to the academic outcomes measures shown in Chapters 3 and 4 of this report.

Combining Data Sources

As described in Chapter 2, MDRC received academic outcome data for program and control group students from three data sources: Chaffey College, the California Community College Chancellor's Office (CCCCO), and the National Student Clearinghouse. The scope of schools covered and data available vary by data provider.

Chaffey supplied MDRC with student-level transcript,¹ student probationary status, Success Center participation, and degree receipt data for courses taken and degrees or certificates earned at Chaffey College. MDRC received similar data from CCCCCO, including student-level information on courses taken, credits earned, and grade received, as well as degree/certificate receipt at any participating two-year public California college (of which Chaffey College is one). Finally, the National Student Clearinghouse provided enrollment data, not including student course-taking information, and degree/certificate data for students attending any of more than 3,000 colleges,² encompassing most two-year public California schools. Thus, all three data sources cover student academic progress at Chaffey College, and two of three data sources provide student progress information at other two-year public California colleges. (See Table B.1 for a summary.)

The overlapping nature of these data forced a decision about which data to use when discrepancies across sources occurred. Although data comparisons showed remarkable consistency between sources, some differences did appear. A small subset of these discrepancies resulted from students' absences from a data set.³ Other inconsistencies occurred as a result of the fluidity that is inherent in academic data, as students withdraw from courses after the add/drop period, incomplete grades are updated subsequent to the end of the term, and degrees are withheld until students complete their nonacademic (paperwork) requirements even if they

¹Transcript data include courses for which students registered, number of credits earned, and course grades.

²National Student Clearinghouse data cover 90 percent of college enrollment. See www.studentclearinghouse.org.

³Matching through student identification number resulted in all students being located (that is, having one transcript record or more) in both Chaffey and CCCCCO data files. National Student Clearinghouse data were available for 97.3 percent of the sample.

The Opening Doors Demonstration

Appendix Table B.1

Data Source Characteristics, Enhanced Opening Doors Study

Chaffey College Four-Year Follow-Up Report

Characteristic	Data Source		
	Chaffey College	California Community College Chancellor's Office	National Student Clearinghouse
<u>Covered colleges</u>			
Chaffey College	✓	✓	✓
California 2-year public colleges		✓	✓
All U.S. colleges ^a			✓
<u>Data available</u>			
Probation status	✓		
Success Center participation	✓		
Course-level transcript information ^b	✓	✓	
Enrollment ^c	✓	✓	✓
Degree/certificate attainment	✓	✓	✓

SOURCES: MDRC data sources summary using Chaffey College transcript, California Community College Chancellor's Office, and National Student Clearinghouse data.

NOTES: ^aNational Student Clearinghouse data include data for more than 3,000 colleges covering 90 percent of college enrollments. See www.clearinghouse.org.

^bCourse-level transcript data include courses for which students registered, course name and type, course grade, and credits attempted and earned.

^cEnrollment status using Chaffey transcript and California Community College Chancellor's Office data is determined using course-level transcript information.

have completed their academic (coursework) requirements.⁴ The imperfect process of assigning National Student Clearinghouse enrollment dates to term of enrollment, described in more detail below, resulted in some additional differences.

In general, data from Chaffey College were determined to be the most up-to-date of the three sources; whereas schools provide “snapshots” of their data to CCCCO and the National

⁴Different data sources sometimes differ on how they treat people who have completed all the academic requirements but not all the nonacademic ones.

Student Clearinghouse a few times a year (often without updating previous data submissions), the Chaffey College data system is consistently updated with grade, enrollment, and degree receipt changes. Similarly, the additional course-taking and degree receipt information available through CCCCCO make these data more complete than the National Student Clearinghouse data, with regard to enrollment and degree receipt at two-year public California colleges.

As a result, credit accumulation, enrollment, and degree receipt *at Chaffey College* are determined using data provided by Chaffey only. CCCCCO data contribute to measures of credit accumulation, enrollment, and degree/certificate attainment when pertaining to academic outcomes *at two-year public California colleges other than Chaffey College*. Finally, enrollment and degree/certificate receipt *at private, for-profit, and four-year colleges*, as well as *colleges outside of California* come from data provided by the National Student Clearinghouse. Credit accumulation data at these schools are unavailable since the National Student Clearinghouse does not include these data. In summary, Chaffey data take precedence over CCCCCO data, which, in turn, trump National Student Clearinghouse data.

Timeframes for Measure Creation

Not only are many data sources combined to create academic outcome measures in this report, but also a variety of timeframes related to those measures are presented. The remainder of this appendix discusses how terms are assigned and different time periods are defined.

First, CCCCCO degree data and National Student Clearinghouse enrollment and degree data were not associated with a term; consequently, terms were assigned based on dates of enrollment or degree award date. Assigning a term to degree/certificate attainment is simpler, since only one date is associated with each outcome. For both data sources, credentials awarded between October and March were assigned to the fall term, and degrees awarded between April and September were assigned to the spring term.

Assigning term of enrollment to National Student Clearinghouse records is more complicated. All National Student Clearinghouse enrollment records of more than two weeks (14 days), the typical length of the add/drop period, were assigned to a term. In general, enrollments between January 1 and May 31 were considered spring enrollments; between June 1 and August 15, summer enrollments; and between August 16 and December 31, fall enrollments.⁵

For the most part, students were enrolled (and earning credits) during fall, spring, and summer terms; however, a few students (typically those attending quarter schools) have winter

⁵While this general rule applies, other factors contribute to these decisions, such as the school's calendar system and reporting patterns, as well as the registration type (for example, "full time," "half time," and "withdrawal") associated with the enrollment record.

term enrollments.⁶ In order to simplify the presentation of outcomes, fall and winter terms are pooled together when credit accumulation and registration are presented. Similarly, enrollment and credit accumulation data from spring and summer terms are combined.

Further simplifying the presentation of academic progress, many measures display yearly outcomes. Since program participation began during the fall 2006 semester, all yearly measures begin with the fall term and include the subsequent winter, spring, and summer terms.⁷ In interpreting “cumulative number of semesters enrolled” measures, note that in one year the maximum number of semesters a student could be enrolled, even when concurrently enrolled in multiple schools, is two semesters (fall/winter term and spring/summer term).

⁶Quarter schools generally have three 10-week terms (in addition to summer), while semester schools generally have two 15-week terms (plus summer).

⁷The “program year” is defined as the fall 2006 and spring 2007 terms only. Year 4 credit accumulation measures and enrollment at Chaffey College and other two-year public California colleges are complete. Some enrollment data at other colleges may be incomplete. Degree measures included degrees awarded prior to June 30, 2010.

Appendix C

Statistical Model for the Impact Analysis

The basic strategy for the impact analysis is to estimate the difference in outcomes between the program and control groups, adjusting for blocks, or rounds. (Random assignment of students was conducted separately for two rounds of students. The first round targeted students who were on probation at the end of the fall 2005 semester, and the second round targeted students who were on probation at the end of the spring 2006 semester.) This strategy generates estimates of the average impact of the opportunity to participate in the Enhanced Opening Doors program (the “intent-to-treat”).¹ A linear model is used to estimate the impact of the program on outcomes:

$$(1) y_i = \sum_{b=1}^2 \alpha_b \text{block}_{bi} + \beta_1 t_i + \varepsilon_i$$

Where:

- $y_i =$ An outcome (for example, credits earned) for student i .
- $\text{block}_{bi} =$ A dummy indicator equal to 1 if student i is in random assignment block b , and 0 otherwise. There are two blocks.
- $t_i =$ A treatment indicator equal to 1 if student i was assigned to the treatment group, and 0 otherwise.

The main coefficient of interest is β_1 , which reflects the estimated average program impact. A two-tailed t-test is used to assess whether β_1 differs from zero. For those primary outcomes that are binary, a logistic regression model was used to confirm the findings from the linear probability model. As is typically the case in experimental analyses, the results for the two types of models, in terms of statistical significance, were the same in all cases.

¹In an “intent-to-treat” analysis, comparisons are made between those who were randomly assigned to the program and control groups, regardless of whether they actually participated in the program or, for the control group, in regular classes and services. For a more detailed discussion of intent-to-treat analyses, see Bloom (2006).

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MDRC

16 East 34th Street
New York, NY 10016
Tel: 212 532 3200

Regional Office

475 14th Street
Oakland, CA 94612
Tel: 510 663 6372

www.mdrc.org