DOUBLING GRADUATION RATES

Three-Year Effects of CUNY's Accelerated Study in Associate Programs (ASAP) for Developmental Education Students

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BUILDING KNOWLEDGE TO IMPROVE SOCIAL POLICY

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Overview

Community colleges offer a pathway to the middle class for low-income individuals. Although access to college has expanded, graduation rates at community colleges remain low, especially for students who need developmental (remedial) courses to build their math, reading, or writing skills. Many reforms have been found to help students in the short term, but few have substantially boosted college completion. The City University of New York's (CUNY's) Accelerated Study in Associate Programs (ASAP), launched in 2007 with funding from the New York City Center for Economic Opportunity, is an uncommonly comprehensive and long-term program designed to help more students graduate and help them graduate more quickly.

ASAP represents both an opportunity and an obligation for students. It was designed to address multiple potential barriers to student success and to address them for up to three years. ASAP requires students to attend college full time and encourages them to take developmental courses early and to graduate within three years. The program provides comprehensive advisement from an adviser with a small caseload and enhanced career services and tutoring. ASAP offers blocked or linked courses for the first year and offers a seminar for the first few semesters, covering topics such as goal-setting and study skills. The program provides a tuition waiver that fills any gap between financial aid and college tuition and fees. It also provides free MetroCards for use on public transportation, contingent on participation in key program services, and free use of textbooks.

This report presents results from a random assignment study of ASAP at three CUNY community colleges: Borough of Manhattan, Kingsborough, and LaGuardia. Low-income students who needed one or two developmental courses were randomly assigned either to a program group, who could participate in ASAP, or to a control group, who could receive the usual college services. Comparing the two groups' outcomes provides an estimate of ASAP's effects. Key findings from the report include the following:

- **ASAP was well implemented.** The program provided students with a wide array of services over a three-year period, and effectively communicated requirements and other messages.
- **ASAP substantially improved students' academic outcomes over three years, almost doubling graduation rates.** ASAP increased enrollment in college and had especially large effects during the winter and summer intersessions. On average, program group students earned 48 credits in three years, 9 credits more than did control group students. By the end of the study period, 40 percent of the program group had received a degree, compared with 22 percent of the control group. At that point, 25 percent of the program group was enrolled in a four-year school, compared with 17 percent of the control group.
- **At the three-year point, the cost per degree was lower in ASAP than in the control condition.** Because the program generated so many more graduates than the usual college services, the cost per degree was lower despite the substantial investment required to operate the program.

ASAP's effects are the largest MDRC has found in any of its evaluations of community college reforms. The model offers a highly promising strategy to markedly accelerate credit accumulation and increase graduation rates among educationally and economically disadvantaged populations.

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Preface

Community colleges provide relatively affordable postsecondary instruction to millions of students across the country, and their critical role in helping build the nation's workforce has gained increasing recognition. Unfortunately, many community college students never earn a degree. Completion rates are especially low for students who enter college without all the math, reading, or writing skills they need to do college-level work. Numerous reforms have been tried to help students with developmental education needs succeed, but few have substantially boosted college completion.

In 2007, the City University of New York (CUNY), with the support of the New York City Center for Economic Opportunity, launched Accelerated Study in Associate Programs (ASAP) to encourage and support community college students to attend school full time and graduate. The exceptionally ambitious program provides a rich array of financial assistance, special courses, enhanced advising, and other support services for three full years.

This report presents important findings from MDRC's random assignment evaluation of ASAP at three CUNY community colleges. The evaluation targeted low-income students who needed one or two developmental courses to build their math, reading, or writing skills. ASAP's effects are the largest MDRC has found in any of its evaluations of community college reforms. After three years, the program substantially increased full-time enrollment, accelerated credit accumulation, and almost doubled the rate of graduating with an associate's degree. It also increased the likelihood that students would transfer to a four-year school. Positive effects were found for all of the subgroups of students examined in the evaluation. The evaluation also found that, even though ASAP required a substantial investment, the cost per degree was lower among students in the program than it was for those receiving the usual college services.

ASAP's effects after three years signal the great promise of comprehensive, extended interventions to substantially improve outcomes for community college students. ASAP's effects are especially notable given that they were for a group of students who entered college with developmental education needs. ASAP shows that such students can succeed with the right combination of services and supports, and without changing what happens inside the classroom.

In light of ASAP's success, CUNY is continuing to expand the program, with a goal of serving over 13,000 students by fall 2016. CUNY and MDRC are working together to develop evaluations of ASAP replications at interested community colleges. ASAP is receiving attention across the nation, and rightly so: It is a model program all colleges should consider.

Gordon L. Berlin
President, MDRC

Acknowledgments

The City University of New York (CUNY) launched Accelerated Study in Associate Programs (ASAP) in 2007 with funding from New York City's Center for Economic Opportunity (CEO), and CEO has continued to support the program. In 2009, senior university leadership from the CUNY Office of Academic Affairs — Alexandra Logue, former Executive Vice Chancellor for Academic Affairs and University Provost; John Mogulescu, Senior University Dean for Academic Affairs and Dean of the School of Professional Studies; and David Crook, University Dean for Institutional Research and Assessment — approached MDRC about the possibility of evaluating ASAP, and we enthusiastically accepted the opportunity. CUNY secured the initial investment for the evaluation from the Leona M. and Harry B. Helmsley Charitable Trust; the Robin Hood Foundation provided additional funds soon after. We greatly appreciate their generous backing and ongoing commitment.

We are very grateful to Donna Linderman, the University Associate Dean for Student Success Initiatives and ASAP Executive Director, for her invaluable partnership and collaboration throughout the study. She worked closely with MDRC to launch the evaluation at each college and has continued to play a critical role. We are also grateful to Zineta Kolenovic, currently ASAP Expansion and Replication Specialist, and Diana Strumbos, ASAP Assistant Director for Research and Evaluation, who provided data for the report from CUNY's Institutional Research Database and have been instrumental in helping us understand the data and key CUNY policies. Daniela Boykin, ASAP Deputy Director, provided helpful information about the program operations throughout the study. Ms. Linderman, Ms. Kolenovic, Ms. Strumbos, and Ms. Boykin also reviewed an earlier draft of this report and provided valuable feedback.

We greatly appreciate the assistance and support of several administrators and staff at Borough of Manhattan Community College (BMCC), Kingsborough Community College (KCC), and LaGuardia Community College (LGCC). Space does not permit us to name everyone who has played a role in ASAP and the evaluation, but we want to particularly acknowledge some individuals. President Antonio Pérez and former Senior Vice President of Academic Affairs Sadie Bragg at BMCC; former President Regina Peruggi and Vice President for Academic Affairs and Provost Stuart Suss at KCC; and President Gail Mellow, former Vice President for Academic Affairs Peter Katopes, and Assistant Dean for Academic Affairs Ann Feibel at LGCC have supported the project and provided important leadership. The colleges' current and former ASAP Directors and Assistant Directors — Lesley Leppert-McKeever and Nadine Brown at BMCC; Richard Rivera and Marie Caty at KCC; and Bernard Polnariev at LGCC — worked closely with MDRC to begin the study on their campuses and have been terrific partners over the years. We appreciate all that they and the ASAP staff at the three colleges have done to support the evaluation and bring the program model to life for participat-

ing students. Several ASAP staff worked hard to recruit and randomly assign students for the study; special thanks go to Denessa Rose and Sandra Rumayor at BMCC, Jonelle Gulston at KCC, and Tyleah Castillo at LGCC.

Many MDRC staff members have contributed to the ASAP evaluation and to this report. Robert Ivry, Lashawn Richburg-Hayes, Elizabeth Zachry Rutschow, and Kate Gualtieri worked with CUNY administrators to lay the groundwork for the study. Vanessa Martin worked closely with Donna Linderman and the colleges' ASAP directors and staff to develop and implement the recruitment and sample intake procedures for the study. She was assisted by Herbert Collado and former MDRC staff member Monica Williams. Joel Gordon, Galina Farberova, Jon Heffley, and Shirley James and her staff developed and monitored the random assignment and baseline data collection process. Herbert Collado and former MDRC staff members Katherine Morris and Shane Crary-Ross participated in visits to the colleges to collect information on the program's implementation. Leslyn Hall, a consultant to MDRC, coordinated the student survey effort and Abt/SRBI conducted the survey. Jonathan Rodriguez worked closely with one of the report's authors on the cost research and Chapter 5. Gordon Berlin, Robert Ivry, Lashawn Richburg-Hayes, Marie-Andrée Somers, and John Hutchins reviewed early drafts of this report and provided helpful comments. Himani Gupta and Kelsey Patterson assisted in the report coordination and fact-checking. Christopher Boland edited the report, and Stephanie Cowell and Carolyn Thomas prepared it for publication.

Finally, we would like to thank the hundreds of students who participated in the evaluation at BMCC, KCC, and LGCC. We are especially grateful to the students who completed the student survey and shared information on their experiences in college for the study. We hope that the findings from the evaluation will be used to improve college programs and services for them and others in the future.

The Authors

Executive Summary

Community colleges offer a pathway to the middle class for low-income individuals. Although access to college has expanded in recent decades, graduation rates at community colleges remain low, especially for students who need developmental (remedial) courses to build their basic skills. Nationwide, only about 15 percent of students with developmental education needs attending a two-year college earn a degree or certificate within three years.[1] Many reforms have been found to help students in the short term, but few have meaningfully boosted college completion. This report discusses a program that made a big difference for students and substantially increased graduation rates. Accelerated Study in Associate Programs (ASAP), operated by the City University of New York (CUNY), one of the nation's largest public urban university systems, is an uncommonly comprehensive and long-term program designed to help more students graduate and help them graduate more quickly. Launched in 2007 with funding from the New York City Center for Economic Opportunity, ASAP has been implemented at six of CUNY's seven community colleges.

ASAP presents students with both an opportunity and an obligation. Designed to address multiple potential barriers to student success, ASAP provides structure and support for up to three years through the following key components:

- **Requirements and messages:** Students are required to attend college full time and are encouraged to take developmental courses early and to graduate within three years.
- **Student services:** Students receive comprehensive advisement from an ASAP-dedicated adviser with a small caseload, career information from an ASAP-dedicated career and employment services staff member, and ASAP-dedicated tutoring services.
- **Course enrollment:** Students may enroll in blocked or linked courses (two or more courses grouped together with seats reserved for ASAP students) in their first year. Students also enroll in an ASAP seminar during their first few semesters covering topics such as setting goals and study skills. Students can also register for courses early.

[1]These data are based on a computation of beginning postsecondary students data from the U.S. Department of Education's National Center for Education Statistics (NCES) using the NCES QuickStats website (http://nces.ed.gov/datalab/quickstats).

- **Financial supports:** Students receive a tuition waiver that covers any gap between financial aid and college tuition and fees. Students also receive free MetroCards for use on public transportation, contingent on participation in key program services, and free use of textbooks.

MDRC, a nonprofit education and social policy research organization, evaluated ASAP's effects on students' academic outcomes, and its implementation and costs. The study targeted low-income students who needed one or two developmental courses at three CUNY community colleges: Borough of Manhattan, Kingsborough, and LaGuardia. This report shows that, compared with usual college services, ASAP substantially increased enrollment in college and credit accumulation, and nearly doubled graduation rates after three years. ASAP's effects are the largest MDRC has found in more than a decade of research in higher education.

Who Is in the Evaluation Sample?

MDRC used a random assignment research design to evaluate the impacts (or effects) of ASAP on students' academic outcomes over a three-year study period (or follow-up period), compared with usual services and courses at the colleges. The study targeted students who met the following eligibility criteria at the point of random assignment: had family income below 200 percent of the federal poverty level or were eligible for a Pell Grant (or both), needed one or two developmental courses (to build math, reading, or writing skills), had previously earned 12 credits or fewer, were New York City residents, were willing to attend college full time, and were in an ASAP-eligible major. Each eligible student who agreed to participate was assigned, at random, either to the program group, whose members had the opportunity to participate in ASAP, or to the control group, whose members had the opportunity to receive the usual college services. One group (or cohort) of students was assigned just before the spring 2010 semester and the other just before the fall 2010 semester.

The 896 students in the sample completed a Baseline Information Form (BIF) just before they were randomly assigned. Roughly two-thirds of the students in the research sample are women and most are relatively young. (Seventy-seven percent were 22 years of age or younger when they entered the study.) Reflecting the collective student body at the three colleges, the study sample is racially diverse, with no racial majority. The majority of sample members lived with their parents, were unmarried, and did not have children.

What Are the Key Findings?

Key findings from this report include the following:

- **ASAP was well implemented during the period studied, and the difference between ASAP and usual college services available to the study's control group was substantial.**

ASAP is jointly administered by the CUNY Office of Academic Affairs (CUNY Central) and the participating community colleges. CUNY Central devised the program model and oversees the colleges' implementation of the program. Each college has an ASAP team that operates the program and provides services to students. In addition, a CUNY Central ASAP team leads various internal evaluation efforts to assess the program's effects and to improve the program. College ASAP staff record information about students' contact with advisers and career and employment staff in a centralized data management system. Those data are analyzed monthly and the information is used to help manage and modify the program. College staff also track weekly attendance at tutoring and ASAP seminars and report that attendance information to CUNY each semester. Overall, during the period studied, the ASAP program operated with a high level of monitoring and assessment, with a focus on ongoing improvement.

MDRC found that ASAP's requirement to attend school full time was communicated and enforced, and its messages to take developmental courses early and graduate within three years were communicated effectively. The program provided much more intensive student services than typically available, particularly advising. The implementation of ASAP's blocked or linked classes varied across the colleges, but most program group students took at least one course with a concentration of ASAP students. ASAP linked the receipt of monthly MetroCards to participation in key program services, such as advising. ASAP provided students free use of textbooks, and provided the tuition waiver to those whose need-based financial aid did not cover their tuition and fees. Table ES.1 provides more detail about ASAP's implementation and the differences between ASAP and the usual college services.

- **ASAP substantially improved students' academic outcomes over three years, almost doubling graduation rates.**

This random assignment evaluation, like CUNY's internal study of ASAP,[2] found that the program made a dramatic difference for students. Figure ES.1 shows enrollment rates at any CUNY college for sample members over the three-year follow-up period. The colleges have main sessions, similar to traditional fall and spring semesters, followed by shorter intersessions;

[2]Donna Linderman and Zineta Kolenovic, *Early Outcomes Report for City University of New York (CUNY) Accelerated Study in Associate Programs (ASAP)* (New York: The City University of New York, 2009); Donna Linderman and Zineta Kolenovic, *Results Thus Far and the Road Ahead: A Follow-up Report on CUNY Accelerated Study in Associate Programs (ASAP)* (New York: The City University of New York, 2012).

Evaluation of Accelerated Study in Associate Programs (ASAP) for Developmental Education Students

Table ES.1

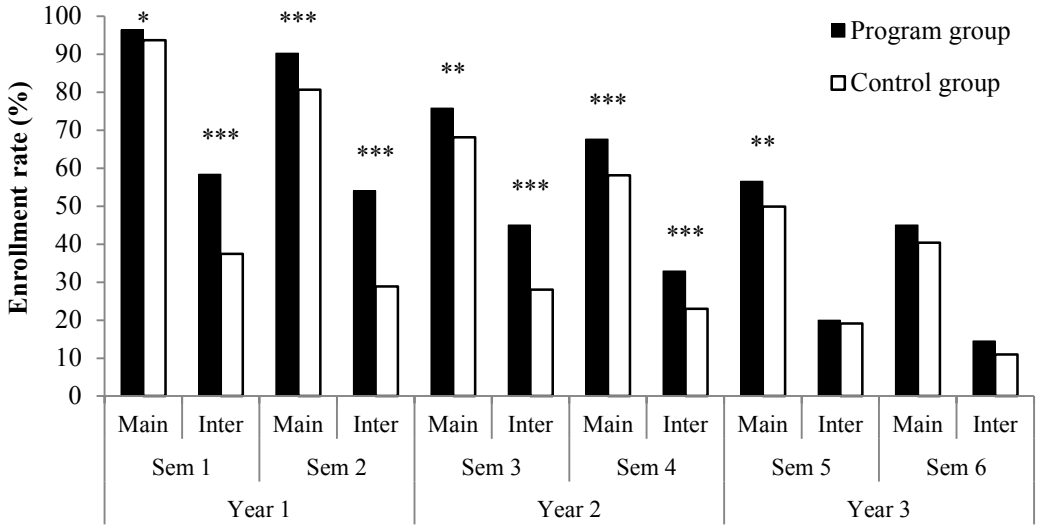
Key Differences Between ASAP and Usual College Services Three-Year Impacts Report

ASAP	Usual College Services
Requirements and Messages	
• **Full-time enrollment:** Required • **Taking developmental courses early:** Encouraged consistently and strongly • **Graduating within three years:** Encouraged consistently and strongly	• **Full-time enrollment:** Not required • **Taking developmental courses early:** Encouraged often but not strongly • **Graduating within three years:** Not typically encouraged
Student Services	
• **Advising:** Student-to-adviser ratio between 60:1 and 80:1; 95 percent of students met with an adviser during first year and students met with an adviser an average of 38 times in that period • **Career services:** 80 percent of students met with career and employment services staff during first year and students met with such staff an average of 9 times in that period • **Tutoring:** 74 percent of students received tutoring outside of class during first year and students met with a tutor an average of 24 times in that period	• **Advising:** Student-to-adviser ratio between 600:1 and 1,500:1; 80 percent of students met with an adviser during first year and students met with an adviser an average of 6 times in that period • **Career services:** 29 percent of students met with career and employment services staff during first year and students met with such staff an average of 2 times in that period • **Tutoring:** 39 percent of students received tutoring outside of class during first year and students met with a tutor an average of 7 times in that period
Course Enrollment	
• **Blocked or linked courses:** Available for first year; few students took complete block of courses, but most students took at least 1 class with a concentration of ASAP students • **ASAP seminar:** Most students took an ASAP seminar for 3 semesters	• **Blocked or linked courses:** Available at 2 colleges during first semester; participation in blocked or linked courses unknown • **Support seminars:** Some students took a freshman seminar or student success course during first year
Financial Supports	
• **Tuition waiver:** 3-11 percent of students received waiver, depending on semester • **Free MetroCards:** Most students received free MetroCards for use on public transportation, contingent on participation in the program • **Free use of textbooks:** Most or all students received textbooks	• **Tuition waiver:** Not available • **Free MetroCards:** Not available • **Free use of textbooks:** Not available

SOURCE: MDRC field research data and MDRC student survey.

Figure ES.1

Three-Year Enrollment at CUNY Colleges



SOURCE: MDRC calculations from CUNY Institutional Research Database data.

NOTES: 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 site and research cohort.

Enrollment is based on courses in which students are still enrolled as of the end of the add/drop period.

"Main" represents the main session for the semester. "Inter" represents the intersession for the semester.

the figure shows the semesters' main sessions and intersessions separately. ASAP increased the proportion of students who enrolled in college during most sessions of the follow-up period. The effects are especially large during the intersessions. For example, during the intersession of the second semester, 54 percent of the program group enrolled, compared with only 29 percent of the control group. Because control group students enrolled at relatively low rates during intersessions, they left much room for improvement, and ASAP advisers encouraged students to take classes during intersessions to achieve full-time status and to continue accumulating credits. Not shown in the figure, ASAP increased full-time enrollment throughout the follow-up period. ASAP also substantially increased the average number of credits students earned. As Table ES.2 shows, program group members earned an average of approximately 48 credits over three years, about 9 credits more than their control group counterparts.

Evaluation of Accelerated Study in Associate Programs (ASAP) for Developmental Education Students

Table ES.2

Three-Year Summary of Credits Earned, Degrees Earned, and Enrollment in a Four-Year College

Outcome	Program Group	Control Group	Difference	
Total credits earned	47.7	39.0	8.7	***
Earned a degree from any college (%)	40.1	21.8	18.3	***
Enrolled in a 4-year college in semester 6 (%)	25.1	17.3	7.8	***
Sample size (total = 896)	451	445		

SOURCE: MDRC calculations from CUNY Institutional Research Database 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.

Most important, 40 percent of the program group students had received a degree by the end of the three-year follow-up period, compared with 22 percent of the control group — an 18 percentage point impact. ASAP's effects are the largest MDRC has found in any large-scale experimental study of a program in higher education. For example, among MDRC's evaluations of community college reforms, the next largest increase in three-year graduation rates is 4 percentage points.[3] ASAP's effect on graduation is especially notable given that students needed some developmental courses when they entered the study.

At the end of three years, ASAP had increased the proportion of students who transferred to a four-year college. As Table ES.2 shows, 25 percent of the program group was enrolled in a four-year college in the last semester of the follow-up period, compared with 17 percent of the control group. Whether enrollment itself leads more program group members to earn a bachelor's degree is an open question, but the step of enrolling in a four-year college is a critical milestone.

[3]Reshma Patel, Lashawn Richburg-Hayes, Elijah de la Campa, and Timothy Rudd, *Using Financial Aid to Promote Student Progress: Interim Findings from the Performance-Based Scholarship Demonstration* (New York: MDRC, 2013).

The effects described above represent ASAP's average impact across the full sample. ASAP had large positive effects for all of the subgroups of students examined in this report, including those defined by gender, receipt of high school diploma at baseline, and number of developmental courses needed at the start of the study. This finding provides evidence that ASAP was effective for a range of students, including some who tend to have lower overall success rates in higher education, such as men and students with multiple developmental needs.

- **At the three-year point, ASAP was found to be cost-effective; the cost per degree was lower in ASAP than in the control condition.**

A comprehensive analysis of ASAP's costs estimated that the program's services and benefits cost approximately $14,000 more per student than usual college services over the study's three-year follow-up period. MDRC estimated that an additional $2,300 was spent on costs associated with program group members attempting more credits than control group members. Despite ASAP's higher total cost (about $16,300, or 63 percent more than CUNY spent per student on usual college services), the cost per degree was lower because ASAP generated so many more graduates over the three-year follow-up period than did the usual college services.

What Are the Implications of the Findings?

Key implications of the findings include the following:

- **The findings in this report show that a comprehensive, long-term intervention can substantially boost students' success.**

In contrast with many other reforms, ASAP targets multiple potential barriers to students' success by providing an array of services and supports over three years. This approach allows ASAP to help a range of students with different barriers, including students with multiple barriers or different barriers over time. Despite ASAP's incremental cost, the program has a lower cost per graduate than the usual college services because it boosted graduation rates so dramatically — at least at the three-year point.

- **Developmental education students' outcomes can be markedly improved with the right package of supports, requirements, and messages — without changing what happens in the classroom.**

MDRC's evaluation shows that ASAP was highly effective for students who needed one or two developmental courses. The higher education field has been struggling to develop initiatives to substantially help developmental education students, and ASAP has provided by far the most encouraging results of any community college reform that MDRC has yet evaluat-

ed. ASAP provides enhanced student services, including tutoring, and financial supports, but it does not change the curriculum or pedagogy in developmental education classrooms. There is still work to be done to improve what happens inside the community college classroom — and many reforms are being tried — but ASAP offers an alternative approach with great promise.

- **ASAP was designed to help a range of students, and this report presents evidence that it succeeded.**

As noted above, the majority of students in the evaluation sample were relatively young when they entered the study, lived at home with their parents, were unmarried, and did not have children. At the same time, however, the sample included a substantial number of nontraditional college students: 23 percent of the evaluation sample were 23 or older when they entered the study, 26 percent did not live with their parents, 31 percent were employed, 15 percent had at least one child, and at least 6 percent were married.[4] ASAP also generated positive effects for all of the subgroups of students examined.

ASAP requires students to enroll full time. Nationwide, about 40 percent of community college students (roughly 2.8 million students) attend school full time.[5] Some higher education experts argue that many community college students simply cannot attend full time because of family obligations, work, or other issues. This study shows that ASAP boosted full-time enrollment, compared with usual college services — in other words, some students who would have otherwise attended college part time attended full time because of ASAP. It is unclear, however, what the program's effects might be with a different target group, such as low-income parents, who might have more trouble enrolling full time.

What Can Other Colleges Learn from ASAP?

Exactly which program components drove ASAP's effects is unknown. Ultimately, everything in ASAP's comprehensive package of requirements, messages, services, and supports had the potential to affect students, and MDRC's evaluation estimated the effect of that full package. The report, however, explores whether any particular aspects of the program may have been more or less important in changing students' outcomes. This exploration, while much more speculative than the findings presented above, underscores the importance of several key features:

[4]Fifteen percent of the evaluation sample did not indicate their marital status on the BIF.

[5]American Association of Community Colleges' Community College Enrollment website (http://www.aacc.nche.edu/AboutCC/Trends/Pages/enrollment.aspx).

- **Requiring full-time enrollment in college while also providing an array of ongoing supports for students, such as enhanced advisement and financial supports, can yield substantial changes in enrollment and credit accumulation.**

ASAP's full-time enrollment requirement, coupled with multiple supports to facilitate that enrollment, seem to be central to the program's success. It is one thing to tell students to attend full time and hope that they can find the resources to do so; it is an entirely different thing to tell them to attend full time while also covering their tuition, books, and transportation, and providing an array of student services to support them in school. A survey of students about a year after the study started found that 90 percent of program group members believed that they had most or all of the services and supports that they needed to succeed in school. It is unknown exactly how much support is necessary to yield substantial effects on full-time enrollment, but it seems unlikely that such a requirement paired with far more limited financial and student service supports would be as fruitful.

- **Intersessions, perhaps especially in summer, provide good opportunities to increase enrollment in college and credit accumulation.**

ASAP's impacts on enrollment were especially large in winter and summer intersessions. Far fewer students receiving usual services typically enroll in winter and summer than do ASAP students, leaving much room for improvement. ASAP advisers encouraged students to enroll in intersessions both to achieve full-time status and to accelerate their progress through school, and ASAP's tuition supports covered that enrollment. Notable enrollment increases in intersessions have been found in prior studies as well, including a study of a scholarship that was offered during the summer.[6]

- **Requiring students to participate in key program components, monitoring participation, and providing a meaningful benefit to those who participate fully can markedly increase receipt of services.**

During this study's follow-up period, students were required to see their adviser twice a month, meet with ASAP career and employment staff once a semester, and attend tutoring frequently if they were taking a developmental course or were on academic probation. ASAP linked meeting the participation requirements with receipt of a monthly MetroCard for use on

[6]See, for example, Reshma Patel and Timothy Rudd, *Can Scholarships Alone Help Students Succeed? Lessons from Two New York City Community Colleges* (New York: MDRC, 2012); Michael J. Weiss, Alexander Mayer, Dan Cullinan, Alyssa Ratledge, Colleen Sommo, and John Diamond, *A Random Assignment Evaluation of Learning Communities at Kingsborough Community College: Seven Years Later* (New York: MDRC, 2014).

public transportation. By the end of the follow-up period, each card cost $112 — a substantial cost for a low-income student. In a city where millions of people travel primarily or exclusively on public transportation, a MetroCard is a strong incentive and very likely increased students' participation in ASAP services. As Table ES.1 shows, the program group had far more contact with advisement, career services, and tutoring.

To effectively link MetroCard receipt with use of student services, it was important to have information about that participation. Using a centralized data management system operated by CUNY Central, college staff closely tracked students' participation in advising and career and employment services. College staff also recorded attendance at tutoring every week. This tracking allowed the program staff to closely monitor students' participation, adjust advisement as needed, and distribute MetroCards appropriately.

- **Monitoring program operations, with a focus on ongoing improvement, contributes to strong implementation.**

CUNY Central and the colleges also used the data tracking system to monitor program implementation, and conducted several internal evaluations. It seems likely that the high level of monitoring, with a focus on improvement, contributed to ASAP's strong implementation and, in turn, to its positive effects for students.

- **Encouraging or requiring students to take developmental courses early in their time in college can hasten and increase completion of those requirements.**

Students in the program group moved through their developmental courses more quickly, and after three years many more program group members than control group members had completed their developmental education requirements.

What's Next?

CUNY has been expanding ASAP, with a goal of serving over 13,000 students by fall 2016. While most ASAP features have remained the same, each ASAP adviser now works with no more than 150 students — more than during the evaluation but still far fewer than the number of students with whom advisers typically work. After the first semester, students are placed into one of three groups based on academic, personal resiliency, and program compliance criteria. The groups receive differentiated types of contact (individual, group, telephone, and e-mail) with a continued focus on maintaining strong relationships with their adviser. Tracking data from CUNY shows that the vast majority of students have maintained contact with their adviser at least once a month.

While ASAP's three-year effects are notable, it will be necessary to continue tracking students' outcomes to learn about the long-term effects. At the three-year point, ASAP may have caused students to graduate who would not have otherwise, accelerated graduation for students who would have graduated eventually, or both. Further research questions include the following: Do program group students continue to earn associate's degrees at high rates? Do control group members begin to catch up? What are the long-term effects on receipt of bachelor's degrees? It is also valuable to know what happens to students in the labor market. A college degree is important in part because of its potential to benefit its recipient in the form of better job opportunities.

ASAP has received much attention in the field of higher education, and many colleges have begun exploring whether they might adopt a similar model. Indeed, ASAP is a highly promising program that warrants testing in other settings. It would be useful to understand whether ASAP can be implemented by other colleges, in different contexts, with different students, and yield substantial effects. To help answer those questions, MDRC is working with CUNY to develop evaluations of ASAP replications at interested colleges.

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ASAP's effects are the largest MDRC has found in any of its evaluations of community college reforms. The evaluation found that CUNY and three of its community colleges successfully implemented a program that generated large, meaningful impacts for low-income students with developmental education needs in an urban setting. With an investment in the right combination of services, requirements, and messages, community college students can succeed at far higher rates. The ASAP model offers a highly promising strategy to markedly accelerate students' progress, increase graduation rates, and build human capital among educationally and economically disadvantaged populations.

Chapter 1

Introduction

Postsecondary education is widely seen as the best way for low-income individuals to enter well-paying careers and move into the middle class. Yet despite the great strides made in the last several decades in opening up college education to women, students of color, and low-income students, graduation rates remain stubbornly low, particularly for the latter two groups. This problem is especially pronounced in community colleges, the primary postsecondary education providers for low-income students in the United States. Among full-time, first-time, degree-seeking students entering public two-year colleges, only 20 percent graduate with a degree within three years, or 150 percent of what is considered "normal" for an associate's degree.[1] By five years, that number increases to only 35 percent, while 45 percent of students have not earned a degree and are no longer enrolled in college at all.[2]

Low-income students in particular face immense challenges when they enter community college. Financial aid may not cover all of students' cost of attendance, leaving them unable to afford tuition, books, or transportation.[3] To cope, they may take on more work hours or enroll in school only part time, both of which correlate with reduced academic success.[4] Many students juggle multiple priorities, including family and work, alongside school. Low-income students and students of color may be especially hard hit, as they may be less likely to understand how to navigate college, particularly those who are first in their families to attend.[5]

In addition to economic and social barriers to success, community college students face academic barriers. The majority of first-time community college students are referred to developmental (or remedial) education, meaning that they must take basic courses in math and English before they are considered ready to take college-level courses. Not only do these students' graduation rates lag behind their peers', but the majority do not even complete the developmental course sequences to which they are referred.[6]

College administrators and policymakers across the country are looking for new programs and policies that can improve degree completion rates and developmental education success rates. One promising example is Accelerated Study in Associate Programs (ASAP),

[1] Snyder and Dillow (2013).
[2] Green and Radwin (2012).
[3] The Institute for College Access and Success (2009).
[4] The Advisory Committee on Student Financial Assistance (2001).
[5] Palmer, Davis, Moore, and Hilton (2010).
[6] Bailey, Jeong, and Cho (2010).

created by the City University of New York (CUNY). Launched in 2007 with funding from the New York City Center for Economic Opportunity, ASAP is one of the most ambitious efforts in the country to improve the success rates of low-income postsecondary students. As of spring 2014, ASAP had served more than 6,400 students.

ASAP is both an opportunity and an obligation for students. ASAP requires students to attend college full time and provides a rich array of supports that allows them to do so. Unlike many programs, ASAP is designed to address multiple potential barriers to student success simultaneously and to address them over three full years. ASAP's goal is to accelerate students' academic progress and graduate at least 50 percent of participating students within three years, far exceeding the national average. The program includes the following key components:

- **Requirements and messages:** Students are required to attend college full time during the fall and spring semesters and are encouraged to complete developmental education early and to graduate within three years.
- **Student services:** Students receive comprehensive advisement from an ASAP-dedicated adviser with a small caseload, career information from an ASAP-dedicated career and employment services staff member, and ASAP-dedicated tutoring services separate from the usual college tutoring services.
- **Course enrollment:** Students enroll in blocked or linked courses in their first year. Students also enroll in an ASAP seminar covering topics such as goal-setting, study skills, and academic planning. Students can register for courses early so that they can create convenient schedules and get seats in the courses they need.
- **Financial supports:** Students receive a tuition waiver that fills any gap between financial aid and school tuition and fees. Students also receive free use of textbooks and free MetroCards for use on public transportation, contingent on participation in the program.

MDRC, a nonprofit, nonpartisan education and social policy research organization, conducted a random assignment evaluation of ASAP, examining its implementation, its effects on students' academic outcomes, and its costs. For this study, ASAP targeted low-income students who needed one or two developmental courses and who were willing to attend school full time. While ASAP operates at six of CUNY's community colleges, only three participated in this evaluation: Borough of Manhattan Community College, Kingsborough Community College, and LaGuardia Community College. The study began in 2009. This report presents three years of results from the study, including the largest estimated impacts on credit accumu-

lation and graduation rates of any of the higher education programs that MDRC has evaluated: a near doubling of graduation rates after three years.

ASAP Context Within CUNY

CUNY launched ASAP in 2007 to address the low rates of degree completion at its community colleges. The program initially targeted college-ready students — that is, students with no developmental education needs. However, in 2009, the program expanded to include students who needed some developmental education courses, in the hope that they, too, would benefit. Although the trend across the country has been to address the needs of developmental education students within the classroom, with changes to content and pedagogy of developmental courses paramount, CUNY was confident that ASAP could serve students needing developmental coursework just as it did college-ready students.

CUNY's leaders developed ASAP to address what they perceived as the major barriers affecting their community college students. Rather than address issues piecemeal, they designed a package of wraparound services that could address multiple issues over three full years. The majority of the components included in ASAP are based on research into what helps and hinders student success in college. However, unlike many postsecondary interventions that are short term and designed to address just one or a few barriers to graduation — and as a result, produce modest or short-term effects — ASAP lasts a full three years and addresses multiple barriers to completion.

First, students must enroll in school full time in order to receive ASAP's complete package of benefits. Full-time attendance correlates strongly with academic achievement.[7] In addition, ASAP students are encouraged to take their developmental courses quickly, starting in their first semester in college. While this has not been studied rigorously, it is a popular and widespread practice that many researchers and postsecondary institutions believe helps students succeed academically.[8]

ASAP requires students to attend academic advising, a key student service that can help students address topics such as which classes to take, balancing school with other responsibilities, accessing other student services, interacting with professors, and staying on track to graduate on time. This may be especially important in community colleges, where students are less likely to have the familial and social resources to help them navigate the path to graduation. Advising is intended to mediate these issues for students, leading them to make better decisions and solve

[7]Adelman (2006).

[8]Long and Boatman (2013); Rutschow and Schneider (2011); Attewell, Lavin, Domina, and Levey (2006).

problems before they drop out of school and increasing persistence and success. An experimental evaluation of an enhanced advising program conducted by MDRC found that enhanced advising increased students' persistence and the number of credits earned in the short term, though the effects faded over time.[9] A more recent experimental evaluation of individualized student coaching, similar to academic advising, found positive effects on persistence.[10] Continuing to provide advising throughout students' time in college may sustain these effects long term.

ASAP students must also attend tutoring while they take their developmental courses and if they are on academic probation. Tutoring is intended to help underprepared students by providing additional instruction, reinforcement, and support. Best practices in the field include offering multiple types of academic support, from one-on-one tutoring to computerized supplemental instruction.[11] MDRC evaluated a program that offered students incentives to visit a tutoring center as part of a larger intervention and found modest positive results on academic performance in the targeted course sequence.[12]

ASAP provides blocked and linked courses for students in their first year, the goals of which are to enroll ASAP students together in the same courses so that they can meet and support one another and to give program students convenient schedules so they can make the most of their time on campus. While this component does not reach the level of a classical learning community,[13] it is designed to provide some similar benefits, such as better acclimation to the college environment and the formation of meaningful bonds with fellow students. These benefits may be especially important in community colleges, since students commute rather than live on campus and may spend little time at school outside of class.[14] Experimental evaluations of learning communities conducted by MDRC have found mixed results, with some learning communities producing statistically significant[15] impacts on persistence and credit accumulation and others producing no statistically significant impacts.[16] However, there is evidence in the literature that strengthening students' academic and social bonds in college leads them to persist from semester to semester.[17]

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[9]Scrivener and Weiss (2009).

[10]Bettinger and Baker (2013).

[11]Fullmer (2012); Rheinheimer, Grace-Odeleye, Francois, and Kusorgbor (2010); Perin (2004).

[12]Sommo et al. (2014).

[13]In learning communities, small cohorts of students are placed together in two or more courses for one semester, usually in the freshman year. The courses are linked by a common theme and are taught by a team of instructors who collaborate with each other to develop the syllabi and assignments.

[14]Taylor, Moore, MacGregor, and Lindblad (2003); Adelman (2005).

[15]A statistically significant impact is one that is unlikely to have arisen by chance and can be attributed to the intervention with a high degree of confidence.

[16]Weiss, Visher, Weissman, and Wathington (forthcoming).

[17]Person, Rosenbaum, and Deil-Amen (2006); Deil-Amen (2011).

The same may be said about the ASAP seminar. In addition to providing social support, student success courses such as the ASAP seminar are intended to help students by teaching soft skills that are key to success, including time management and study skills. Success courses may be especially helpful for students who do not know how to navigate the college environment. MDRC conducted an evaluation of a success course aimed at students with developmental education needs. It found that the success course had a positive impact on students' self-reported interdependence,[18] self-awareness, emotional intelligence, and engagement in college, among students with low levels of these attributes. However, the course did not have statistically significant effects on students' academic achievement.[19]

ASAP also provides financial supports to assist low-income students with costs other than tuition and fees. While nearly all ASAP students receive federal or state financial aid, many might still be unable to pay for textbooks and transportation to class. By providing low-income students with funds to fill the gap between government financial aid and total tuition and fees and to cover expenses such as use of textbooks and transportation, ASAP is designed to allow students to work fewer hours and experience reduced financial stress. These benefits, in turn, should allow them to focus more on their studies. Many researchers have evaluated financial aid interventions that have produced promising results, including positive impacts on credits earned and graduation.[20]

ASAP is unique in that it brings all of these components together in a single, comprehensive program — without getting inside the classroom. By offering students an array of services, ASAP seeks to address the many barriers — academic, financial, and personal — that can impede students from succeeding in college. Taken together, the components of ASAP seek to effect positive academic outcomes for students. In the short term, students will progress through developmental education, earn more credits, and persist semester to semester. Long term, students will earn a degree and transfer to a four-year institution to continue their higher education and, as a result, achieve better employment and earnings outcomes.

Notably, ASAP does not alter what takes place inside the classroom. ASAP students take the same academic courses with the same faculty and cover the same material as non-ASAP students. Unlike many reforms in developmental education that change practices *inside* the classroom, ASAP proposes that student outcomes can be improved by changing the college context *outside* the classroom.

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[18]Interdependence is defined as building mutually supportive relationships that foster the achievement of goals.

[19]Rutschow, Cullinan, and Welbeck (2012).

[20]Patel, Richburg-Hayes, de la Campa, and Rudd (2013); Goldrick-Rab, Harris, Kelchen, and Benson (2012).

MDRC's Evaluation of ASAP

CUNY conducted extensive internal evaluations of ASAP to track students' outcomes and continually improve the program. CUNY published two reports on ASAP comparing ASAP students' outcomes with a constructed comparison group.[21] These reports found that students in ASAP were more likely than the constructed comparison group to complete developmental education, persist from semester to semester, enroll full time, and earn associate's degrees within three years. CUNY also commissioned a study to investigate the cost-effectiveness of ASAP and the costs and benefits of the program.[22] This study found that ASAP was highly cost-effective in terms of graduating students. While it cost more to run ASAP, the increase in the number of students receiving degrees outpaced the additional cost.

In 2009, CUNY commissioned MDRC to conduct an external, experimental evaluation of ASAP. For the evaluation, ASAP exclusively targeted students who needed developmental education. MDRC used a random assignment research design to estimate the effects of ASAP on students' academic outcomes over a three-year period, compared with the effects of the usual college services. Widely considered to be the gold standard in social science research, random assignment creates two groups that are similar with respect to both observable characteristics, such as race, developmental need, and age, and unobservable characteristics, such as tenacity and motivation. Students in one group are assigned to receive the program's services, while students in the other group receive the usual college services. Because the groups are similar at the outset, differences in outcomes found later provided an unbiased estimate of the causal effect of the program.

The evaluation examined ASAP's estimated effects on students' academic progress and completion, including persistence, credit accumulation, degree receipt, and transfer to four-year universities. The study also looked at ASAP's impacts on subgroups of students.

In addition to the impact analysis, MDRC's evaluation explored how ASAP was implemented at the three colleges in the study and how the program services that ASAP offers compared with the usual college services. The study also examined participation in various services by program and control group members as reported on a student survey and the nature of the treatment contrast, or the difference between the services received by the program group and the services received by the control group. Although the evaluation cannot determine which components of ASAP matter most, the implementation and survey findings may help shed light on that issue.

[21] Linderman and Kolenovic (2012); Linderman and Kolenovic (2009).
[22] Levin and Garcia (2012); Levin and Garcia (2013).

Finally, MDRC examined the costs of ASAP. Because ASAP provides many services, it is more expensive than most other programs MDRC has studied. The cost-effectiveness analysis, however, determines whether the positive impacts on student outcomes justify the cost.

Summary of Findings

MDRC has released two prior publications on the evaluation of ASAP.[23] A 2012 report covered early findings from the program, including positive first-year impacts on credits earned and developmental course completion. In 2013, MDRC released a brief presenting two-year findings on ASAP, showing that it increased students' likelihood of enrolling each semester, including summer and winter intersessions; increased students' credit accumulation, including both developmental and college-level credits; and increased students' graduation rates by nearly 6 percentage points after two years.

This report follows up on those promising findings by carrying the analysis through to a full three years. It finds increasingly large impacts on credit accumulation and graduation as students reached three years, the benchmark established by CUNY for completing the program.

Chapter 2 of this report describes the study, background, and data sources in more depth. Chapter 3 provides an in-depth implementation analysis of the ASAP components as well as presents survey results showing the treatment contrast. Chapter 4 assesses ASAP's impacts on students' academic outcomes. Chapter 5 presents a cost-effectiveness analysis of the ASAP program. Chapter 6 concludes the report with a discussion of future directions for ASAP and its evaluation.

[23]Scrivener, Weiss, and Sommo (2012); Scrivener and Weiss (2013).

Chapter 2

Sites, Evaluation Sample, and Data Sources

This chapter begins by briefly describing the three City University of New York (CUNY) community colleges that participated in the evaluation. It then explains the random assignment process that was used at the colleges to build the sample for the evaluation and describes the characteristics of the sample members when they entered the study. The final section of the chapter presents the data sources used in this report.

Colleges in the Evaluation

One of the largest public university systems in the country, CUNY serves more than half a million students annually. It consists of 24 institutions across the five boroughs of New York City, including four-year colleges, graduate and professional schools, and seven community colleges. CUNY's Office of Academic Affairs (CUNY Central) oversees the academic policies of the colleges and is responsible for the development and implementation of special multi-college programs, such as ASAP.[1]

ASAP operates at the six community colleges that existed in 2007 when the program was launched.[2] Three of those colleges participated in the ASAP evaluation: Borough of Manhattan Community College (BMCC), Kingsborough Community College (KCC), and LaGuardia Community College (LGCC). CUNY and MDRC selected the three colleges primarily based on administrators' willingness to participate in an evaluation and work with MDRC to develop and implement a process to randomly assign students, and their capacity to reach the desired sample size goals. They are the largest of CUNY's community colleges.

BMCC is located in lower Manhattan, and the school served about 21,000 students when the study started. KCC is located in Brooklyn and LGCC is located in Queens; both colleges enrolled about 15,000 students at the start of the study. The majority of students at each college attend school full time (about two-thirds at BMCC and LGCC and three-fourths at KCC). All three colleges offer a wide range of associate's degree programs that prepare students to transfer to four-year colleges or enter professional careers.

[1]See the CUNY website at www.cuny.edu.

[2]The seventh community college, Guttman Community College, opened in 2012.

Random Assignment Process and the Sample Members

MDRC's evaluation targeted students at BMCC, KCC, and LGCC who met the following eligibility criteria when they entered the study:

- Family income below 200 percent of the federal poverty level or eligible for a Pell Grant (or both)
- In need of one or two developmental courses based on CUNY Assessment Tests[3]
- New student or continuing student who had earned 12 credits or fewer and had at least a 2.0 grade point average
- New York City resident
- Said they were willing to attend college full time
- In an ASAP-eligible major (the colleges excluded a few majors that have requirements that make graduating quickly difficult)[4]

The eligibility criteria for the evaluation mirror those for ASAP when the study started, with two exceptions. First, ASAP accepted some college-ready students who did not need any developmental courses, but the evaluation did not. MDRC chose to focus on the effects of ASAP for students with developmental education needs. In fall 2009, the semester before the evaluation began, 77 percent of the students who began in ASAP across the six colleges needed one developmental course or more and 23 percent did not.[5] During the semesters of sample intake, the ASAP programs at the three colleges in the evaluation enrolled only students with developmental education needs, while the three colleges that were not in the evaluation continued to enroll some college-ready students.

Second, ASAP serves some students who are undocumented immigrants. These students are ineligible to receive federal or state financial aid and thus ineligible for the ASAP tuition waiver. The colleges in the evaluation continued to serve undocumented immigrants during the sample intake period, but because the evaluation was designed to test the effects of

[3]In other words, students need one math course, one English course, two math courses, two English courses, or one math course and one English course.

[4]The excluded majors at the time were: at BMCC, Allied Health Sciences, Pre-Clinical Nursing, Forensic Science, and Engineering Science; at KCC, Nursing; and at LGCC, Allied Health Sciences and Engineering Science.

[5]Linderman and Kolenovic (2012).

the *full* package of ASAP services including the tuition waiver, these students were not included in the evaluation sample.[6]

ASAP staff at BMCC, KCC, and LGCC invited students who met the eligibility criteria to participate in the evaluation through letters, e-mails, and phone calls. Students who attended an intake session on campus, during which time staff described the ASAP program and evaluation, and who agreed to take part in the study completed an Informed Consent Form and a Baseline Information Form (BIF) containing questions about their background. After completing the forms, each student was randomly assigned (using a computer program at MDRC) either to the program group, whose members had the opportunity to participate in ASAP, or to the control group, whose members had the opportunity to receive the usual college services. As compensation for their time, students who were randomly assigned to either group received a one-week MetroCard for use on public transportation.[7]

Two groups (or cohorts) of students were randomly assigned for the MDRC evaluation: one just before the spring 2010 semester and the other just before the fall 2010 semester. (BMCC and KCC assigned students before both semesters; LGCC assigned students only before the fall 2010 semester.) A total of 896 students are in the sample — 451 in the program group and 445 in the control group.

The right-most column of Table 2.1 shows selected characteristics of the evaluation sample from the BIF and data from CUNY. As the table shows, 62 percent are women and students' average age was 21.5 when they entered the study. Although the majority of the students in the sample were relatively young when they were randomly assigned, almost one-fourth (23 percent) were 23 years of age or older. The sample is racially and ethnically diverse: 44 percent are Hispanic, 34 percent black, 10 percent white, and 8 percent Asian or Pacific Islander. The vast majority of the sample members (88 percent) were receiving a Pell Grant. According to available data, 60 percent of the sample needed developmental instruction in one subject (math, reading, or writing) and 27 percent needed instruction in two subjects.[8] Appendix Table A.1 shows some additional characteristics of the students in the sample from the BIF. As that table shows, most sample members were unmarried and did not have any children when they entered the study, and most lived with their parents. About one-third reported that they

[6]According to CUNY, 19 undocumented immigrants entered the ASAP program at the three colleges in the study during the sample intake period.

[7]The MetroCard covered unlimited subway and bus fares for seven days and cost $27.

[8]Developmental education need is shown in Table 2.1 as "unknown" for students who did not have CUNY Assessment Test data in all subject areas.

Evaluation of Accelerated Study in Associate Programs (ASAP) for Developmental Education Students

Table 2.1

Selected Characteristics of MDRC ASAP Evaluation Sample Compared with the College Population

Three-Year Impacts Report

Characteristic	Freshman Population[a]	Target Population[b]	Evaluation Sample
Total students	35,163	8,520	896
Gender (%)			
Male	45.3	44.2	37.9
Female	54.7	55.8	62.1
Age (%)			
18 or younger	30.6	28.1	39.1
19	18.8	20.5	18.1
20 to 22	25.7	28.9	19.4
23 to 29	16.2	15.9	14.5
30 or older	8.6	6.7	8.9
Average age (years)	22.1	21.7	21.5
Race/ethnicity (%)			
Hispanic	36.7	40.2	43.6
White	16.8	12.0	10.0
Black	31.4	34.7	34.3
Asian or Pacific Islander	14.7	12.8	7.5
Other[c]	0.3	0.2	4.6
Student's status (%)			
Incoming freshman	45.9	45.3	60.0
Returning student	42.6	45.8	33.5
Transfer student	11.6	9.0	6.5
Pell status[d]			
Received a Pell Grant	65.7	96.7	87.5
Did not receive a Pell Grant	15.7	3.3	6.5
Developmental need[e] (%)			
College-ready	24.8	NA	1.9
1 subject	28.7	55.1	59.9
2 subjects	21.4	44.9	26.8
3 subjects	13.7	NA	0.3
Unknown[f]	11.4	NA	11.0

(continued)

Table 2.1 (continued)

SOURCES: MDRC calculations from CUNY Institutional Research Database (IRDB), Integrated Postsecondary Education Data System (IPEDS), and Baseline Information Form (BIF) data.

NOTES: Distributions may not add to 100 percent because of rounding.

[a]This category includes students seeking an associate's degree at Borough of Manhattan Community College (BMCC), Kingsborough Community College (KCC), and LaGuardia Community College (LGCC) who had 12 or fewer credits at the start of the spring 2010 or fall 2010.

[b]This category is an approximation of the target group for the evaluation. It includes students seeking an associate's degree at BMCC, KCC, and LGCC who had 12 or fewer credits at the start of the spring 2010 or fall 2010 term, were proficient in one or two subjects, were enrolled in ASAP approved majors, were NYC residents, and had an income below 200 percent of the federal poverty guideline or were in receipt of a Pell Grant.

[c]For the first two columns, the "Other" category represents students who selected American Indian/Native Alaskan on CUNY documents. For the last column, the "Other" category represents students who selected Native American, Alaska Native, or Other on the BIF.

[d]Categories do not add to 100 percent as students who did not complete a FAFSA are not included.

[e]Estimates for percentages of college-ready students, students needing developmental education in three subjects, and students with unknown developmental needs are not given for target population students, as the target population included only students with one or two developmental needs.

[f]Developmental need is unknown for students without CUNY Assessment Test data in all subject areas.

were working at the point of random assignment. Almost all sample members said they planned to earn a degree beyond an associate's degree.[9]

Table 2.1 shows selected characteristics for two other groups of students: (1) in the first column, freshmen and relatively new students (those who had earned 12 or fewer credits); and (2) in the second column, students who met the eligibility criteria for the study (based on available data). This evaluation estimates ASAP's effects for the evaluation sample, who, as noted above, agreed to participate in the study. When considering whether ASAP's effects on the evaluation sample are likely to generalize to the broader target population, it is important to consider how the characteristics of the students in the evaluation compare with the characteristics of students in the target population — that is, whether the evaluation sample is representative of the target population. Overall, the characteristics presented in Table 2.1 suggest that the evaluation sample looks relatively similar to the target population. Apart from the key ASAP and evaluation eligibility criteria of receiving a Pell Grant and needing one or two developmen-

[9]A table in a prior report presented baseline characteristics for program group and control group members separately (Appendix Table 1 in Scrivener, Weiss, and Sommo, 2012). The two groups' characteristics were very similar, suggesting that the random assignment process succeeded in creating two similar groups of students.

tal courses, the characteristics of the target population and those of freshmen or relatively new students are relatively similar.

Reflecting the eligibility criteria, most or all of the target population and evaluation sample needed developmental work in one or two subjects.[10] Based on the available data, half of the freshman population needed developmental instruction in one or two subjects; most of the others needed either no developmental courses or developmental instruction in three subjects. At the three colleges participating in the study, ASAP targeted the roughly half of students in the middle of the range of basic skills.

Data Sources

MDRC's evaluation of ASAP relied on several data sources. The analyses in this report are based primarily on the data sources described below.

- **Baseline data:** The BIF included demographic and other background information. BIF data are used above to help describe the students in the evaluation sample. In Chapter 4, BIF data are used to identify subgroups of sample members in order to estimate ASAP's effects for different types of students.
- **CUNY Assessment Test data:** Students at CUNY's community colleges are required to take the CUNY assessment tests in reading, writing, and math before they begin classes. Test score data are used in this chapter to help describe students when they entered the study and in Chapter 4 to estimate students' progress through developmental education and to define subgroups of students.
- **Field research:** Throughout the course of the evaluation, MDRC staff conducted field research visits to the three participating colleges to interview the administrators and staff involved in ASAP. The interviews provided detailed

[10]Appendix Table A.2 shows more information on the sample's developmental education needs at baseline. Based on CUNY's Institutional Research Database (IRDB) data, 39 percent of the students in the sample needed one course and 51 percent needed two courses. Two percent of the students in the sample did not need any developmental courses, and 8 percent needed three or more. One college implemented the eligibility criteria differently from the others and accepted students who needed multiple math courses even if it meant they needed more than two courses; that college accounts for the majority of students whom MDRC identified as needing three or more developmental courses at baseline (three-fourths of the 8 percent). Nearly all other students identified by MDRC as needing no courses or three courses or more actually needed one or two courses according to CUNY analysis using information other than the IRDB data. Appendix Table A.2 also shows that most students in the sample needed remediation in math; 17 percent needed remediation only in English.

information on the operation of the program. During one visit in 2011, MDRC staff also interviewed selected administrators and staff about the usual college services that were available to the students in the study's control group. In between field visits, MDRC conducted periodic phone calls with the ASAP leadership at CUNY Central and the colleges to discuss program operations. Information from all these interviews is used in Chapter 3 to describe ASAP and the key differences between ASAP and the control environment.

- **MDRC student survey:** A survey was administered to all sample members approximately one year after they were randomly assigned. The survey was initially administered on the Internet; students who did not respond were contacted by phone. In the end, 83 percent of the students in the evaluation sample completed the survey — 85 percent of the program group members and 81 percent of the control group members. As is described in Appendix B, the survey results are likely representative of the full sample. The survey covered topics such as sample members' participation in and experiences with student services, expectations and engagement in college, employment, and financial aid and other financial issues. Findings from the survey are used in Chapter 3 to help describe the treatment contrast between ASAP and the usual college services.

- **CUNY ASAP tracking data:** ASAP staff at the colleges entered information on students' contact with advisers and career and employment specialists into a centralized data management system, for periodic analysis by CUNY. CUNY provided MDRC with summary findings from their analysis, covering the three years after random assignment. This information is used in Chapter 3.

- **Data on ASAP tuition waiver:** CUNY ASAP staff analyzed data on program group students' receipt of the ASAP tuition waiver for the three years after random assignment for all sample members. This information is used in Chapter 3.

- **CUNY student transcript data:** CUNY provided MDRC with information on students' course taking and degree receipt at the three colleges in the study and all the other colleges in the CUNY system. Transcript data from CUNY's Institutional Research Database (IRDB) are available for three years after random assignment for all sample members. These data are used in Chapter 4 to provide a detailed look at the impacts of ASAP on students' academic outcomes, and in Chapter 5 to examine the cost-effectiveness of

the program. Transcript data prior to random assignment are used in one analysis in Chapter 4.

- **Student records from the National Student Clearinghouse (NSC):** The NSC, a nonprofit organization, collects and distributes enrollment, degree, and certificate data from more than 3,500 colleges that combined enroll more than 98 percent of the nation's college students.[11] NSC data are available for three years for all sample members. The data are used in Chapter 4 to examine enrollment and degree receipt at non-CUNY colleges and in Chapter 5 to examine cost-effectiveness.

- **Cost data:** The CUNY Central ASAP office provided expenditure data for the three colleges that were part of the study. To help estimate control group costs, MDRC obtained operating budgets and annual credit hours attempted for the colleges from the Integrated Postsecondary Education Data System (IPEDS). IPEDS is a system of interrelated surveys conducted annually by the U.S. Department of Education's National Center for Education Statistics that gathers information from every college, university, and technical and vocational institution participating in federal student financial aid programs.

[11]See the National Student Clearinghouse's website (www.studentclearinghouse.org/about).

Chapter 3

How Was ASAP Implemented and How Does ASAP Compare with Usual College Services?

Whereas Chapter 1 presents the ASAP model as it was designed or intended, this chapter explains how ASAP was implemented over the three-year study period (or follow-up period) at the three City University of New York (CUNY) colleges that participated in the evaluation: Borough of Manhattan Community College, Kingsborough Community College, and LaGuardia Community College. The follow-up period was spring 2010 through summer 2013. Recall that students in ASAP can receive program services for up to three years.[1] Although the program for the most part was implemented similarly at the three colleges, this chapter highlights notable differences. The chapter also describes the key differences between the experiences of the program group and control group students — the service contrast — that is at the heart of the study's random assignment design. These differing experiences are what caused the effects on academic outcomes described in Chapter 4.

The chapter is divided into several sections. In the sections that cover the program and control environment, ASAP is presented first, followed by the services available to the control group and the service contrast. The findings in this chapter are based on a few key data sources: MDRC field research, analysis from CUNY on program group members' participation in key ASAP activities and tuition waiver receipt, and a survey of program group and control group students about one year after they entered the study. See Chapter 2 for more details on the data sources.

Summary of Findings

ASAP was implemented largely as designed, with some variation by college, as is allowed for in the program model. The program provided students with a wide array of services over a three-year period, and effectively communicated various requirements and other messages. Overall, the difference between ASAP and the usual services at the colleges was substantial. Table 3.1 describes the key differences.

Although Table 3.1 and most of this chapter discuss ASAP component by component, ASAP is really a package of services and supports. The research can neither determine the interactive or complementary effects of the components, nor disentangle the effects of each

[1]For the most part, this chapter uses past tense to describe program implementation, although much of what is discussed may be true of the current program. The program model is discussed in the present tense.

Evaluation of Accelerated Study in Associate Programs (ASAP) for Developmental Education Students

Table 3.1

Key Differences Between ASAP and Usual College Services Three-Year Impacts Report

ASAP	Usual College Services
Requirements and Messages	
• **Full-time enrollment:** Required • **Taking developmental courses early:** Encouraged consistently and strongly • **Graduating within three years:** Encouraged consistently and strongly	• **Full-time enrollment:** Not required • **Taking developmental courses early:** Encouraged often but not strongly • **Graduating within three years:** Not typically encouraged
Student Services	
• **Advising:** Student-to-adviser ratio between 60:1 and 80:1; 95 percent of students met with an adviser during first year and students met with an adviser an average of 38 times in that period • **Career Services:** 80 percent of students met with career and employment services staff during first year and students met with such staff an average of 9 times in that period • **Tutoring:** 74 percent of students received tutoring outside of class during first year and students met with a tutor an average of 24 times in that period	• **Advising:** Student-to-adviser ratio between 600:1 and 1,500:1; 80 percent of students met with an adviser during first year and students met with an adviser an average of 6 times in that period • **Career Services:** 29 percent of students met with career and employment services staff during first year and students met with such staff an average of 2 times in that period • **Tutoring:** 39 percent of students received tutoring outside of class during first year and students met with a tutor an average of 7 times in that period
Course Enrollment	
• **Blocked or linked courses:** Available for first year; few students took complete block of courses, but most students took at least 1 class with a concentration of ASAP students • **ASAP seminar:** Most students took an ASAP seminar for 3 semesters	• **Blocked or linked courses:** Available at 2 colleges during first semester; participation in blocked or linked courses unknown • **Support seminars:** Some students took a freshmen seminar or student success course during first year
Financial Supports	
• **Tuition waiver:** 3-11 percent of students received waiver, depending on semester • **Free MetroCards:** Most students received free MetroCards for use on public transportation, contingent on participation in the program • **Free use of textbooks:** Most or all students received textbooks	• **Tuition waiver:** Not available • **Free MetroCards:** Not available • **Free use of textbooks:** Not available

SOURCE: MDRC field research data and MDRC student survey.

individual component. Such a rich model can help a wide range of students, since different students face different barriers and many students face multiple barriers.

ASAP Staffing, Administration, and Internal Evaluation

This section briefly describes how ASAP was staffed and administered during the study period. (The report does not explicitly address the staffing or administration at the colleges outside of ASAP.) The program was jointly administered by the CUNY Office of Academic Affairs (CUNY Central) and the participating community colleges. CUNY Central devised the original program model and required that all of the CUNY community colleges operate an ASAP program beginning in the fall 2007 semester, with support and funding from the New York City Center for Economic Opportunity (CEO). CUNY Central was responsible for general program administration and any CUNY policy matters, and oversaw any modifications to the model and the colleges' implementation of the program. CUNY Central was also responsible for securing and coordinating the MetroCard and textbook benefits for the colleges, creating marketing materials, conducting citywide outreach to potential students, providing professional development for ASAP staff, disseminating information about ASAP and its effects on students, and managing media relations.

The ASAP team at CUNY Central was led by the University Executive Director, who reported to the Senior University Dean for Academic Affairs. In addition to overseeing ASAP's implementation at the colleges, the director was responsible for fiscal oversight and any necessary fundraising. She was also responsible for all interactions and negotiations with CEO, and communications with other funders, partners, and stakeholders. The director regularly represented ASAP in external venues, such as conferences and briefings. Finally, the director was responsible for CUNY's internal evaluation of the program (discussed later).

When the study started, the CUNY Central team also included two program coordinators, each of whom worked closely with three colleges on their program implementation. The program coordinators monitored program operations and served as a resource for the college ASAP directors. In 2011, one of the program coordinators became the ASAP Deputy Director and began working closely with the University Executive Director to oversee the program. She supported the colleges in their governance and provision of the program, and in their operational and budgetary planning. She also worked closely with the ASAP evaluation team to develop streamlined systems for data collection and reporting, played a key role in promoting increased collaboration and resource sharing across college sites, and was responsible for ASAP's media, marketing, and outreach campaign aimed at recruiting students. She continued playing the program coordinator role for two of the six colleges with ASAP programs, and the second program coordinator oversaw the other four. The CUNY Central ASAP team also

included the ASAP Assistant Director of Research and Evaluation, a research associate, and an administrative assistant.

Each college was responsible for managing, staffing, and implementing its ASAP program. Each college's ASAP program was led by a director who reported to the college's Vice President for Academic Affairs and received day-to-day support from the college's Dean of Academic Affairs. The college ASAP directors closely oversaw the program's implementation, supervised the college's ASAP staff, and worked with CUNY Central. Each college's ASAP program had four to six advisers. Most, if not all, had experience as advisers before working for ASAP. All had master's degrees, many in counseling or social work. The college ASAP staff also included one career and employment specialist, clerical staff members, and part-time tutors. The career and employment specialists all had experience in employment and career-related services before joining ASAP. The tutors were typically adjunct faculty or former students who had moved on to four-year institutions. Other than the part-time tutors at the colleges, all ASAP staff worked full time for the program. During select periods, such as registration, ASAP advisers pitched in on college-wide tasks.

Over the course of the study period, most ASAP staff remained in their positions. A few advisers at the colleges left their jobs and were replaced. The ASAP director at one of the colleges moved to a different position at the college in early 2012 and was replaced within a few months.

CUNY Central staff and the college ASAP directors met in person monthly and communicated frequently between meetings. The University Executive Director said that she spoke with the college ASAP directors at least once a week. The program coordinators communicated with the ASAP directors even more frequently, and typically visited the colleges once a month. The staff in the CUNY Central ASAP office met weekly and communicated daily. Similarly, the ASAP staff at each college typically had a staff meeting weekly and communicated daily. The ASAP advisers from all the colleges periodically met, as did the career and employment specialists. All staff gathered annually for an ASAP retreat.

The ASAP team at CUNY Central led several internal evaluation efforts of the program. The research was intended to assess the effects of the program on students but also to improve the program. As the ASAP University Executive Director said, they "regularly use data to inform practice." Each college's ASAP staff recorded information about contact with participating students in a centralized data management system. Those data were analyzed monthly by CUNY Central evaluation staff. Reports were shared with the colleges and the information was used to help manage and modify the program. For example, if students at a certain college were not meeting the benchmark to meet with their adviser twice a month, the CUNY Central staff and the college's ASAP director would discuss the issue and possible

remedies. CUNY Central also conducted periodic surveys of ASAP students and held student focus groups about their perceptions of and satisfaction with the program. CUNY Central has also been conducting an internal quasi-experimental evaluation of the effects of ASAP on students' academic outcomes using a constructed comparison group.[2] Overall, during the study period, the ASAP program operated with a high level of monitoring and assessment, with a focus on ongoing improvement.

Requirements and Messages

As discussed in Chapter 1, ASAP aims to accelerate students' progress through college. ASAP students are required to attend college full time. They are also encouraged to take courses during winter and summer intersessions, complete their developmental courses early, and graduate within three years. This section describes how the requirements and messages were communicated and received and highlights the key differences between ASAP and the study's control environment.

Enroll Full Time and Take Intersession Courses

ASAP: The program requires students to attend college full time in each fall and spring semester they are in the program. (Students who need fewer than 12 credits to graduate do not need to enroll full time in their final semester.) ASAP advisers reported that, for the most part, this requirement was not an issue for participating students. When students were unable to attend full time because of work, family, health, or other reasons, they could receive ASAP advising and other student services, but not the financial benefits. (These semesters counted toward a student's three-year limit on ASAP services.)

At two of the three colleges in the evaluation, the fall and spring semesters are each composed of two sessions: a 12-week session followed by a 6-week session. Courses taken during the 6-week session count toward full-time enrollment. For example, a student can take 9 credits during the 12-week session and 3 credits during the 6-week session for a total of 12 credits and be considered a full-time student. ASAP advisers at these colleges said that they encouraged students to take courses in the six-week intersessions, in some cases to achieve full-time status for the semester and in other cases to go beyond the 12-credit threshold and accumulate more credits. ASAP advisers at the third college reported that they encouraged students to take courses during the two six-week summer sessions, but tended to encourage only high-performing students to take courses during the more intensive three-week winter session.

[2]To date, CUNY has published two public reports from their evaluation: Linderman and Kolenovic (2009) and Linderman and Kolenovic (2012).

Advisers discussed both full-time enrollment and enrolling in intersessions as a way to help accelerate students' progress through college. For an example of how one student's enrollment in intersessions helped him progress academically, see Box 3.1.

Service contrast: Based on MDRC field research, the academic advisers who work with the general college population at the three colleges in the evaluation did not encourage full-time enrollment or enrollment in intersessions to the degree that the ASAP advisers did. One academic adviser who worked with the regular college population said that it was "almost impossible" for most students at the college to carry a full-time load.

Take Developmental Courses Early

ASAP: In MDRC field research interviews, ASAP advisers reported that they typically encouraged students to take their developmental courses during their first or second semesters in the program. They said that they discussed this primarily when advising students about course planning and registration. Developmental courses are often part of the blocked or linked classes that ASAP offers to participating students during their first two semesters (see the later section on course enrollment).

Service contrast: In interviews, non-ASAP advisers said that they often encouraged students to take developmental education courses early, although not as strongly as ASAP advisers did.[3] A few non-ASAP advisers talked about students sometimes not heeding the advice to take developmental courses early, preferring to put them off. With the exception of first semester learning communities at one college (discussed later), non-ASAP students did not take blocked or linked classes with developmental courses.

Responses to MDRC's student survey provide evidence that the messages about developmental courses for ASAP students and non-ASAP students were different. As shown in Table 3.2, 47 percent of program group members reported that they "often" or "very often" heard faculty or staff speak about the importance of taking developmental courses in the first two semesters of college, compared with 31 percent of control group members. The difference of 16 percentage points is statistically significant. (See Box 3.2 for a description of how to read the tables in this chapter that present findings from the MDRC student survey.) This difference is meaningful, although perhaps not as large as might be expected.

[3]Beginning in fall 2013, CUNY instituted a policy that students with developmental education needs should take developmental courses immediately upon enrolling. This change occurred after the follow-up period for this report and had no effect on the sample members.

Box 3.1

How Advising and Intersessions Propelled Frank Forward

In his mid-30s and married with children, Frank decided to enroll in night classes at the nearby community college with the hope of eventually transferring to a four-year university. He had worked in public service for more than 10 years and knew that a bachelor's degree would be required for him to move into management. Frank worked full time during the day and took a full-time course load in the evenings.

Frank was a strong English student but struggled in math, testing into the lowest level of developmental math courses. Knowing that math would be a stumbling block for him, he decided to take his first developmental math course in the summer before enrolling in ASAP, hoping he could remember some of the math he had learned in high school and ease himself back into academic life.

Frank developed a good relationship with his adviser, who understood the unique struggles of nontraditional students and students attending evening courses. Frank would frequently drop by after his classes in the evening to say hello and ask questions. He talked with his adviser about topics such as course sequencing, how to interact with professors, finding scholarships, and planning how to complete his associate's degree and transfer to a four-year school. Because he saw his career advancement as contingent on earning a degree, he wanted to stay on track. Frank's adviser reported that it was comprehensive advising, along with the free textbooks, that proved to be most helpful to Frank's success in ASAP.

Taking his adviser's advice, Frank enrolled in intersessions every semester and quickly accumulated credits. He repeatedly made the Dean's List, something he had not anticipated upon enrolling in school. Frank was able to graduate with an associate's degree in just two years. After taking a break of one semester, he enrolled in a four-year school within CUNY that is highly acclaimed for his major.

Graduate Quickly

ASAP: ASAP's goal is for students to graduate with an associate's degree within three years. MDRC field research found that ASAP delivered the message that students should and can graduate within three years through written materials, program orientation, and early discussions with advisers, beginning immediately when students entered the program. ASAP advisers reported that they continued to communicate that message to students throughout their time in the program, both directly in conversations and indirectly through helping students map out the courses they needed to take in order to graduate by a certain semester. Some ASAP advisers at one of the colleges said they encouraged many students to graduate in two years by taking advantage of the winter and summer intersessions.

Evaluation of Accelerated Study in Associate Programs (ASAP) for Developmental Education Students

Table 3.2

Students' First-Year Experiences: Messages Received

Three-Year Impacts Report

Outcome (%)	Sample Size	Program Group	Control Group	Difference	P-Value
Often or very often heard college faculty/staff speak about:					
Taking developmental courses in the first few semesters	724	47.2	30.8	16.4 ***	0.0000
The goal of obtaining an associate's degree within 3 years	734	69.9	31.8	38.1 ***	0.0000
Survey sample size	742	384	358		

SOURCE: MDRC calculations from the MDRC student survey.

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 site and cohort.

Service contrast: Interviews with non-ASAP advisers indicated that while they pushed students to think through plans for timely graduation, they did not push graduating within three years to the same extent that ASAP advisers did. In field research interviews, non-ASAP advisers were more likely to discuss various challenges of graduating quickly than were ASAP advisers. They were also more likely to talk about the pace of moving through college as an individual issue, grounded in a student's specific situation.

Table 3.2 shows the proportion of sample members who reported on the MDRC student survey that they often or very often heard faculty or staff talk about the goal of obtaining an associate's degree within three years. Far more program group members than control group members reported hearing that message: 70 percent compared with 32 percent.

Student Services

ASAP's requirements and messages are complemented by a set of wraparound services meant to meet students' academic and personal needs. Participation in these services is mandatory, except where noted. The program links participation in services to MetroCard receipt. CUNY created a data tracking system for ASAP staff members to keep track of how students are

Box 3.2

How to Understand the Tables in This Report

Many tables in this report use the format illustrated in the abbreviated table below, which displays some hypothetical survey and transcript data for the program and control groups. The first row shows that 82.6 percent of program group students and 73.4 percent of control group students ever spoke with an adviser. The average outcomes of control group members serve as a proxy for what would have happened to program group members had they not been offered the program.

The difference column in the table shows the difference in the average outcomes of the two research groups. The difference is the estimated effect of the program. For services such as advising, this number represents the average increase (or decrease) in services experienced as a result of the program. For target outcomes, such as credits earned, this number represents the estimated value added of being assigned to the program, above and beyond what students would have achieved if assigned to the control group. In the table below, the estimated average effect of the program on credits earned can be calculated by subtracting 7.9 from 8.7, yielding an estimated effect of 0.8. This effect indicates that, as a result of being offered the program, students earned an estimated additional 0.8 credits compared with what they would have earned had they not been offered the program.

This difference represents the *estimated* effect rather than the *true* effect, which is impossible to know because we cannot know exactly what would have happened to program group students had they not been offered ASAP. This counterfactual world is approximated by the control group. Had a different sample of students participated in the study or if the same group of students had been randomized in a different way, a different estimate would have resulted.

Estimated effects marked with one asterisk or more are, by convention, considered statistically significant. The number of asterisks corresponds to the p-value, which indicates the likelihood that an effect at least as large as the one observed in the study would have occurred if the *true* effect were zero. One asterisk corresponds to a 10 percent probability; two asterisks, a 5 percent probability; and three asterisks, a 1 percent probability. The second estimated effect in the table excerpt has two asterisks, indicating that the estimated effect is statistically significant at the 5 percent level; that is, there is less than a 5 percent chance of observing an estimated effect this large or larger if the opportunity to participate in the program had no true average effect on credits earned. In other words, there is a 95 percent level of confidence that the opportunity to participate in the program had a positive effect on the average number of credits earned.

Outcome	Program Group	Control Group	Difference	P-value
Ever spoke with an adviser (%)	82.6	73.4	9.2 ***	0.0032
Credits earned	8.7	7.9	0.8 **	0.0427

participating in the program: contacts with advisement and career services are logged monthly in the ASAP database, while tutoring visits and attendance in the ASAP seminar are tracked weekly by college staff and reported to CUNY Central each semester.

Comprehensive Advisement

ASAP: Acknowledging the variety of barriers to academic success students may face, ASAP provides students with comprehensive advising not only on academic issues but also on social and interpersonal issues. During the course of the study, ASAP students were required to meet with their assigned adviser in person twice per month throughout each semester; advisers also sometimes communicated with students by phone, e-mail, or text message. Advising appointments were tracked, and attendance was linked to students' receipt of monthly Metro-Cards. ASAP students were assigned an adviser during their first semester and usually continued to see the same person throughout their college careers.

ASAP advisers serve only ASAP students. During the study, they typically held caseloads of 60 to 80 students each semester. This caseload was substantially smaller than the national median in community colleges, which the National Academic Advising Association puts at 441 students per adviser,[4] and the average at each school where ASAP operates. At the three colleges in the study, the ratios ranged from 600 to 1,500 students per adviser.[5] The small caseloads allowed advisers to meet with students more frequently and for longer durations.

ASAP advisers were trained to field a wide variety of topics. In addition to covering the gamut of academic topics, including getting acclimated to college, choosing classes, and picking a major, ASAP advisers helped students with soft skills, such as study habits and time management, how best to balance home, work, and school demands, and extracurricular activities and campus life. Indeed, among survey respondents who saw an adviser, program group students reported discussing an average of eight topics with advisers, compared with five topics for control group students. (See Table 3.3) ASAP advisers kept their schedules open to students for as much time as possible during the day; at schools where ASAP included night and weekend students, ASAP advisers dedicated to night and weekend students kept hours late into the evening and for several hours on Saturdays and Sundays.

Advisers sometimes interacted directly with students' professors or financial aid officers to resolve issues. ASAP advisers reported that they took a forward-looking approach to advising, encouraging students to think early on about aligning their college experience with their career goals and planning to transfer to four-year institutions. ASAP advisers also helped

[4]Robbins (2013).
[5]Linderman et al. (2011).

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Table 3.3

Students' First-Year Experiences: Advising

Three-Year Impacts Report

Outcome	Sample Size	Program Group	Control Group	Difference	P-Value
Ever spoke with an adviser (%)	739	95.0	80.4	14.6 ***	0.0000
Average number of times spoke with an adviser in first year					
First semester	718	21.1	3.7	17.4 ***	0.0000
Second semester	718	16.6	2.0	14.6 ***	0.0000
Among those who spoke with an adviser:					
Average time spent during visit to adviser (%)					
15 minutes or fewer	*647*	*24.5*	*42.2*		
16-30 minutes	*647*	*63.6*	*47.4*		
31 minutes or more	*647*	*12.0*	*10.4*		
Average number of topics discussed with adviser	*648*	*7.5*	*5.1*		
Topics discussed with adviser (%)					
Academic goals	*648*	*91.1*	*64.5*		
Academic progress	*648*	*94.7*	*61.7*		
Course selection	*648*	*92.5*	*89.2*		
Major	*648*	*75.1*	*72.4*		
Requirements for graduation	*648*	*79.0*	*60.6*		
Internships	*648*	*39.4*	*11.4*		
Job opportunities	*648*	*45.5*	*15.6*		
Career planning	*648*	*45.1*	*24.1*		
Transfer credit policies, probation, and drop/add policies	*648*	*60.6*	*44.4*		
College services such as financial aid, tutoring, and counseling	*648*	*73.2*	*43.5*		
Personal matters	*648*	*48.7*	*17.1*		
Something else	*648*	*8.9*	*3.1*		
Quality of advising scale(%) [a]					
Low	*647*	*4.4*	*28.3*		
High	*647*	*37.5*	*10.5*		
Survey sample size	742	384	358		

(continued)

Table 3.3 (continued)

SOURCE: MDRC calculations from the MDRC student survey.

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 site and cohort.

Italic type indicates nonexperimental data. Significance tests are not calculated for nonexperimental data.

[a]The scale is based on responses to five questions about the quality of advising received. "Low" is the percentage of sample members whose ratings of adviser quality were one standard deviation below the mean, indicating a comparatively lower rating; "high" is the percentage of sample members whose ratings of adviser quality were one standard deviation above the mean, indicating a comparatively higher rating. The questions are listed in Appendix B.

students with personal issues as they arose, either within the advising context or by referring students to other resources. For an example of how one student benefited from advising, see Box 3.3.

Service contrast: While dedicated, the colleges' non-ASAP advisers managed very large caseloads that typically did not permit the more personalized touch that students experienced in ASAP advising. Students who were not in ASAP were not required to go to advising except at registration time; once students had passed all their developmental requirements, some colleges allowed them to register online without first seeing an adviser. While students were able to seek out advising as often as they wished, there was no external incentive to do so. Additionally, most advisers focused on academic topics, such as choosing majors and classes; students with personal issues were referred to counselors.

Responses to MDRC's student survey provided additional information on how the advising component of ASAP was experienced by students. (See Table 3.3.) Program group survey respondents reported seeing their advisers more often than control group students during the first year. Program group students' average number of visits was 21 in the first semester and 17 in the second semester, a dramatic increase over control group survey respondents' average of 4 in the first semester and 2 in the second semester. Among those who saw an adviser, program group students were more likely than control group students to rate advising as high quality during their first year. See Appendix B for the list of questions students were asked about their advising experience.

Program group survey respondents also reported spending more time with advisers during each visit. Of students who saw an adviser, 64 percent reported spending 16 to 30 minutes on average with an adviser per session, compared with 47 percent of control group survey

Box 3.3

Michelle Takes Advantage of Comprehensive Advising

The daughter of a single mother, Michelle grew up in a low-income neighborhood in one of New York City's outer boroughs. She enrolled in community college immediately after graduating high school. She already had a college trajectory in mind, with plans to transfer to a four-year university after taking courses at the community college.

Michelle quickly formed a personal bond with her ASAP adviser, and they partnered to make sure she could graduate even more quickly than the three-year ASAP deadline. Michelle attended advising more frequently than required to make sure she was on track both in the ASAP program and in terms of the requirements for transferring to her preferred four-year university. She also e-mailed and texted her adviser with brief or time-sensitive questions. Together, they created an ambitious and personalized plan for Michelle's needs, leading her to accumulate all the credits she needed for her associate's degree in just three semesters, including intersessions. Michelle appreciated the program's comprehensive advising, which covered topics from academics and extracurricular activities to time management and personal issues.

Michelle arrived in college needing one developmental course, a math course that she initially failed but was able to pass by retaking it alone during an intersession. She credited the ASAP tutoring with her success in this course. Michelle also found the financial supports of the program incredibly helpful, relieving her financial stress both about books, which she could not otherwise afford, and transportation. Before ASAP, Michelle worried about transportation costs preventing her from attending class every day.

By the end of her third semester, Michelle transferred to a four-year CUNY college that is highly acclaimed for her major. There, she has earned all As and Bs. Based on her credit accumulation, she is on track to receive her bachelor's degree within four years of her original enrollment in ASAP.

respondents. Control group survey respondents who saw an adviser were much more likely to report sessions lasting an average of 15 minutes or less, 42 percent compared with 25 percent of program group survey respondents. While respondents in both groups reported talking with advisers about topics such as course selection and major, program group students reported covering more topics with their advisers, including academic goals, academic progress, requirements for graduation, and career planning. For instance, 95 percent of program group survey respondents who saw an adviser reported discussing academic progress, compared with just 62 percent of control group survey respondents. Nearly half of program group survey respondents who saw an adviser reported discussing career planning, compared with just one-fourth of control group survey respondents. Program group survey respondents who saw an adviser were also much more likely to report discussing personal matters than control group

survey respondents, 49 percent compared with 17 percent. While these outcomes are all non-experimental and tests of statistical significance were not carried out on them, these gaps are large enough to imply that ASAP students' advising experiences had more depth and breadth than those of students not in ASAP.

The MDRC student survey asked only about first-year college experiences. However, CUNY ASAP tracking data indicate that a relatively high number of advising visits continued in the second and third years for ASAP students, with advisers reporting that most students visited six or more times each semester in the third, fourth, and fifth semesters. At one school, most students visited eight times or more each semester. While not as many as the number of visits students reported in the first year, this number does indicate that ASAP students continued to see their advisers at high rates throughout the three years of the program.[6]

Several ASAP staff said that they felt advising was the most important nonfinancial component of the program for students. Indeed, numerous students who responded to the MDRC student survey with additional feedback commented that their advisers were important to their academic success. Furthermore, ASAP students who participated in CUNY's surveys and focus groups about the program said that advisement was one of the most helpful program components.[7]

Career Services

ASAP: In addition to semimonthly advising visits, ASAP students were required to meet with an ASAP-dedicated career and employment specialist (CES) once per semester. This requirement aimed to get students thinking about jobs and career planning early. The CES covered a number of topics with students, including finding part-time work, balancing work and school, finding scholarships, writing résumés, networking, and aligning college majors with career paths. The CES also hosted career fairs and job talks that ASAP students could attend, and in some semesters organized visits to job sites so students could see first-hand how a particular employer or field operated.

At two of the schools during the study, the CES focused primarily on long-term goals, such as giving students career inventories, helping students connect majors and careers, and finding career-relevant internships and scholarships. The CES encouraged students to plan ahead for their careers and prioritize education. At the third school, the CES was much more

[6]The sample of students represented in the CUNY ASAP tracking data used to estimate trends for advising and career and employment specialist (CES) visits in the second and third years is slightly different from the study's program group. It included a few ASAP students who were not in the program group and did not include program group students who did not enroll in ASAP.

[7]Linderman and Kolenovic (2012).

focused on short-term goals, helping students find part-time work while they were in school and introducing them to local work opportunities. At all three schools, advisers reported occasionally conferring with the CES about how to help students apply for scholarships or achieve their career goals.

Service contrast: Non-ASAP students had access to the colleges' career services offices. There was no external incentive to visit these offices, although staff there reported being quite busy, especially with students who were in their last semester of school. These staff helped students with most of the same topics as the ASAP CES, but typically did so on a one-time basis.

Student survey responses indicated that the majority of program group students experienced ASAP's CES component. Eighty percent of program group survey respondents reported that they had spoken with staff in career or employment services in their first year, compared with 29 percent of control group students. (See Table 3.4.) Program group students' average number of visits in the first semester was 4.9, compared with control group students' average of 1.0. In the second semester, program group students reported meeting with the CES an average of 4.1 times, compared with control group students' average of 0.6 times.

As was noted about advising, MDRC's student survey asked only about first-year college experiences. However, CUNY ASAP tracking data indicated that ASAP students continued to visit the CES at comparatively high rates in the second and third years, with most students visiting the CES two to three times each semester in the third, fourth, and fifth semesters. The majority of ASAP students continued to visit the CES in the third semester. The percentage of ASAP students visiting the CES began decreasing in the fourth and fifth semesters.

Tutoring

ASAP: ASAP students were required to attend tutoring during their developmental courses and any semesters they were on academic probation — a grade point average (GPA) of 2.0 or lower. Each school hired tutors dedicated to ASAP students, often housed in a centrally located space separate from the regular tutoring center on campus. Students had to attend one hour of tutoring per week for each developmental course in which they were enrolled. If students had previously failed the course and were retaking it, they had to attend two hours of tutoring per week for the course. Students brought in forms for the tutors to sign confirming their attendance, which were checked by ASAP administrative staff before distributing MetroCards each month. ASAP students could spend more time with ASAP tutors than required, but that time above the requirement was not tracked. Advisers reported encouraging students struggling with their college-level courses to attend tutoring, although it was not required. They said, however, that only some students did so.

Evaluation of Accelerated Study in Associate Programs (ASAP) for Developmental Education Students

Table 3.4

Students' First-Year Experiences: Career Services

Three-Year Impacts Report

Outcome	Sample Size	Program Group	Control Group	Difference	P-Value
Ever met with career or employment services staff (%)	736	79.5	28.8	50.6 ***	0.0000
Average number of times spoke with career or employment services staff					
First semester	719	4.9	1.0	3.8 ***	0.0000
Second semester	721	4.1	0.6	3.5 ***	0.0000
Survey sample size	742	384	358		

SOURCE: MDRC calculations from the MDRC student survey.

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 site and cohort.

ASAP tutors said that because they met only with ASAP students, they were able to build trust with students and understand the material covered on a deeper level. Although ASAP tutors were hired for only English and math, they often helped students with other subjects as well, such as writing history papers or doing physics problem sets. As noted above, the tutors were typically adjunct faculty or former students now at four-year institutions. Some tutors also visited classes with high concentrations of ASAP students to provide supplemental instruction and tutoring.

Service contrast: Non-ASAP students had access to the colleges' tutoring centers, which offered tutoring in all academic subjects, although some subjects, such as foreign languages, were housed in different locations. Visits to tutoring centers were voluntary unless students were either on academic probation, in which case they had to attend in accordance with their academic plan, or referred by a professor, which advisers reported was quite rare.

The findings from MDRC's student survey indicated that program group students were more likely to receive tutoring than were control group students. Seventy-four percent of program group survey respondents reported receiving tutoring outside of class, compared with

only 39 percent of control group survey respondents, a statistically significant difference. (See Table 3.5.) Program group students were also 26 percentage points more likely to receive in-class tutoring. On MDRC's student survey, program group students reported an average number of tutoring visits of 13 in the first semester and 11 in the second semester. This number correlates with the tutoring requirement for developmental classes; as students passed their developmental courses and were no longer required to attend tutoring, they were less likely to attend. In both semesters, however, there was a significant difference between program and control group students in terms of average number of tutoring sessions. Note that the survey question asked about tutoring broadly, not only about ASAP tutoring, so students may have reported using the college's general tutoring program in addition to, or instead of, ASAP tutoring.

Evaluation of Accelerated Study in Associate Programs (ASAP) for Developmental Education Students

Table 3.5

Students' First-Year Experiences: Tutoring

Three-Year Impacts Report

Outcome	Sample Size	Program Group	Control Group	Difference	P-Value
Ever received in-class tutoring from someone other than the instructor (%)	738	49.4	23.8	25.7 ***	0.0000
Ever received tutoring outside of class (%)	736	73.6	39.4	34.2 ***	0.0000
Average number of times used tutoring services outside of class					
First semester	724	13.0	4.0	9.0 ***	0.0000
Second semester	730	10.6	2.5	8.1 ***	0.0000
Survey sample size	742	384	358		

SOURCE: MDRC calculations from the MDRC student survey.

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 site and cohort.

Other Student Services

ASAP offered students a few services that were voluntary. One such service was the social work intern (SWI), a CUNY Hunter College master's degree candidate who worked in-house three days per week at each campus. ASAP students could see the SWI one on one as needed for in-depth counseling and social work services. This component of the program received mixed responses at the schools. Staff and students thought an on-site social worker could have been valuable, but found that changing the SWI each semester was neither popular with nor effective for students. By the last year of ASAP for the study's second cohort, two of the colleges had eliminated the position. The third had converted the component into group sessions, which focused on issues that concern underserved populations such as first-generation college students and offered participants a safe setting in which to talk about these issues. Due to the sensitive nature of this component, data were not collected about ASAP students' visits with the SWI.

In addition, each semester, a handful of ASAP students across all of CUNY's campuses were selected to participate in the ASAP Student Leadership Program. These students participated in workshops aimed at developing leadership and public speaking skills, including sessions on teamwork, diversity, and advocacy. They would then complete a team project, such as hosting a domestic violence awareness session in the community or creating a mentoring program for low-income high school students. Because so few students participated in this component, data were not collected about it.

Course Enrollment

ASAP did not make changes to pedagogy, curricula, or anything else that happened inside of the classroom. The ASAP students in this study experienced the same faculty and curriculum as the other students at the colleges. The ASAP program did, however, make two changes to students' course enrollment patterns. ASAP students participated in an ASAP seminar course, similar to a student success course, in their first few semesters in the program. ASAP students were also able to enroll in blocked or linked courses with other ASAP students in their first two semesters.

In addition, students were able to register for classes early in every semester they participated in the program. This feature allowed ASAP students to create convenient schedules and have a better chance of enrolling in all the classes they need. Early registration may be especially beneficial for students who need to enroll in classes that are often oversubscribed, such as popular general education requirements or developmental courses, and for students in their final semesters as they complete the last courses they need to graduate. Many students responding to the MDRC student survey noted early registration as a valuable benefit of the program. No data

are available on the proportion of ASAP students who registered early, although advisers reported that the majority did.

ASAP Seminar

ASAP: ASAP students attended an ASAP seminar each semester for their first three to four semesters in ASAP. This was a noncredit course, substituting for a student success course, and covered information about the school, such as available student services and campus navigation, soft skills, including study and problem-solving skills, and stress management. The seminar included early planning for transfer to four-year institutions and career planning. The class also brought in occasional guest speakers to discuss topics such as leadership and community involvement. Depending on the semester, advisers, the CES, or facilitators taught the seminar, although the curriculum was similar across schools. The course was meant to foster a sense of community among ASAP students and educate them about campus resources and soft skills.

At two of the schools, the ASAP seminar in the first semester was replaced with the school's student success course, open only to ASAP students. The curriculum was considered to be similar to the ASAP seminar curriculum.

Service contrast: Non-ASAP students at the school offering all students first-semester learning communities also took a mandatory student success course in the first semester, although they did not take any courses analogous to the ASAP seminar in subsequent semesters. At the school where first semester learning communities were available to students who were at college level in English, students took a student success course in their learning community. The course, however, was otherwise optional to non-ASAP students. At the third school, students had the option of enrolling in a student success course in their first year to become acquainted with campus resources and to learn good study skills. This course was not linked with other courses, and some students chose not to enroll.

Data were not available for ASAP seminar participation since the class was not consistently recorded in course catalogs and databases across campuses and semesters. Qualitatively, advisers and CUNY Central administrators reported that the vast majority of students took the ASAP seminar for at least one semester, although a few students did not take the course in later semesters, especially if it conflicted with courses required for their majors.

Blocked and Linked Courses

ASAP: All three schools offered some form of blocked or linked courses for students in their first year. Blocked courses refer to courses scheduled back to back, while linked courses refer to courses offered as a set but not always scheduled back to back. All schools were

required to work with academic departments to reserve seats or sections specifically for ASAP students. These seats and sections remained reserved for ASAP students until the end of registration. The main purposes of the blocked and linked classes were to ensure that ASAP students could take some of their classes with other ASAP students, fostering a sense of community, and to give students convenient, consolidated schedules so they could make the most of their time on campus. Unlike classical learning communities, these courses did not include integrated curricula or interaction among faculty. However, they did give students the chance to have a community-like experience by sharing courses with other ASAP students.

During the study, each school created a blocked or linked class arrangement that typically included a core course, such as English, blocked or linked with one or more other courses applicable to a great number of students, such as a speech course and the ASAP seminar. Blocked and linked courses were created with both developmental and college-level courses at the core, so that students at either level could participate. The other courses were all college-level courses. Advisers consistently encouraged ASAP students to take blocked or linked courses, although enrollment was not required. Additionally, students were not required to take all courses in a block; if they were only able to fit one course into their schedule, they were still encouraged to do so.

The implementation of blocked and linked courses varied by campus. At one school, students were offered blocked classes in their first two semesters, typically a speech, social science, or history class (a college-level course applicable to all majors) blocked with either college-level English or math (since the program's launch in 2007) or remedial English or math (starting in spring 2011). Advisers encouraged students to take both classes in a block, but enrollment depended on how the courses fit into students' schedules. When students could not attend both courses in the block, advisers suggested taking at least one of the courses. The advisers stressed the benefits, which included being in a course with only ASAP students and taking a course that is slightly smaller than the average class size. In addition, ASAP advisers kept in contact with the professors of blocked courses to make sure students were staying on track. This connection provided students with additional support and gave advisers an early warning system if their students began struggling academically.

At the second school, most ASAP students enrolled in preexisting learning communities in the first semester. These learning communities consisted of three or four courses, typically built around a developmental or college-level English course, and included a student success course, replacing the ASAP seminar, in which only ASAP students enrolled. The curricula of these courses were often linked, with professors collaborating and reviewing students' progress. In the second semester, students were able to enroll in an ASAP-designated English course blocked with the ASAP seminar, which were linked only in terms of scheduling, not curricula. These classes appeared first on students' schedules: they picked the English and seminar link

that they wanted, then selected all of their other classes around them. There were more English classes than seminars, so multiple English classes were linked with each seminar. However, only ASAP students enrolled in the courses.

The third school offered blocked courses during students' first two semesters. The blocks consisted of specific sets of three to four courses, scheduled back to back with the majority of seats reserved for ASAP students. Only after ASAP students had registered were non-ASAP students permitted to register for the remaining seats in the courses. The blocks included courses such as English 101, Introduction to Business, Communications, and developmental math courses, all of which are applicable to a wide variety of majors. The curricula of the courses were not linked, and students could take as many or as few as they preferred. Advisers encouraged students to take as many of these courses as they could fit in their schedules, as the courses were made up of entirely or mostly ASAP students and scheduled in convenient blocks.

Analysis of course enrollment data indicated that participation in blocked and linked courses varied. Across the three schools, about one-third of students enrolled in all of the components in a block. However, many more students enrolled in one course in a block, just as advisers suggested for students unable to take the full set. Perhaps most important, a majority of program group students were enrolled in one or more classes with a concentration of ASAP students.[8] The percentage of ASAP students enrolled in at least one of these courses ranged from more than 60 percent at one school to nearly 85 percent at another. This was largely, although not exclusively, accomplished by the blocked or linked course offerings.

After the first year, blocked or linked courses are no longer offered to ASAP students. Advisers reported that some groups of students who became friends in the first year planned ahead to take courses together. Students were often advised to try to consolidate their courses as much as possible to create convenient school schedules, but whether this happened varied by student. No uniform consolidated schedules were offered to students after the first year.

Given that, across the three schools, enrollment rates in all courses in a block were somewhat low, it is unlikely that these courses *as designed* had a substantial impact on ASAP students' success. However, the much higher enrollment rates in courses with a concentration of ASAP students indicates that students did experience — and may have benefited from — social interaction with ASAP peers. Students also likely benefited from being able to access reserved seats in courses at convenient times or in oversubscribed courses.

[8]A class with a concentration of ASAP students is defined as any class in which five or more ASAP students were enrolled. These five or more students included ASAP students who were not part of the MDRC study and excluded students in the study randomly assigned to the program group but who were not participating in ASAP.

Service contrast: In general, non-ASAP students were not offered blocked or linked courses such as those offered to ASAP students. At the school that offers learning communities to its ASAP students in the first semester, non-ASAP students are also offered learning communities in the first semester, and a majority of non-ASAP students enrolled. At another school, first-semester learning communities were available to non-ASAP students who were reading on a college level, although enrollment rates were lower than at the school offering learning communities to all new students. At both of these schools in the second semester and beyond, and at the other school in all semesters, there were no other widely available blocked or linked course options for non-ASAP students.

Financial Supports

ASAP provides a few key financial supports to participating students. This section discusses those supports and the differences between those supports and what the evaluation's control group received.

Tuition Waiver

ASAP: ASAP waives the difference between a student's tuition and fees and financial aid, specifically, the sum of the federal Pell Grant and the New York State Tuition Assistance Program grant, CUNY students' two main need-based sources of aid.[9] In order to be eligible for a waiver, ASAP students must apply for financial aid by completing the Free Application for Federal Student Aid and be eligible for financial aid.

During the study period, before or at the start of each semester, the college ASAP directors and financial aid offices worked together to apply waivers as needed so that ASAP students did not pay any tuition or fees. The waiver was applied to accounts internally, not paid directly to the students, and students did not get letters or other communication about the precise amount of the waiver. As a result, students typically knew that the waiver existed but did not know how much it amounted to.

At the two colleges where the fall and spring semesters are split into a longer main session and a shorter intersession, the ASAP tuition waiver covered all sessions. At the third college, the tuition waiver covered the fall and spring semesters. Some additional funds were

[9]The term "unmet need" is used in higher education to refer to the difference between the total cost of attending college and financial aid. The total cost of attendance includes tuition and fees as well as other education-related expenses, such as textbooks, transportation, and room and board (The Institute for College Access and Success, 2009). ASAP's tuition waiver covers only tuition and fees. As discussed later, ASAP provides monthly MetroCards and free use of textbooks regardless of a student's amount of financial aid (or level of unmet need).

available for ASAP advisers at that college to allocate at their discretion to cover classes in winter and summer. Typically, advisers allocated those funds for students with a 3.0 GPA or higher.

Recall that one of the eligibility criteria for the evaluation was having family income below 200 percent of the federal poverty level or being eligible for a federal Pell Grant. CUNY analysis of financial aid and ASAP tuition waiver data showed that the vast majority of program group members received enough financial aid to cover their tuition and fees and thus did not need the ASAP tuition waiver. As Table 3.6 shows, only 9 percent of program group students received an ASAP tuition waiver during their first semester in the study. The proportion of students who received a waiver remained at about that level during the first two years of the study. During the third year, between 3 and 5 percent received a waiver. (As is discussed in Chapter 4, the proportion of sample members enrolled in college declined over time.)

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Table 3.6

Three-Year Tuition Waiver Receipt Among ASAP Students

Three-Year Impacts Report

Outcome	Program Group
Received tuition waiver (%)	
First semester	8.9
Second semester	9.3
Third semester	10.4
Fourth semester	10.6
Fifth semester	4.9
Sixth semester	3.3
Average waiver received ($)	57
Average waiver amount per semester among those receiving a waiver ($)	*719*
Sample size	451

SOURCE: MDRC calculations from tuition waiver analysis performed by CUNY ASAP office.

NOTES: Rounding may cause slight discrepancies in sums and differences.
Outcomes shown in italic type are calculated for a proportion of the full sample.

The average tuition waiver among program group members who received a waiver was $719 per semester, as shown in Table 3.6. The average total tuition and fees at the three colleges in the study for full-time enrollment during the 2010-2011 academic year was $1,777 per semester.

Service contrast: For the most part, students outside of ASAP did not receive any similar benefit. Students in a program called College Discovery were eligible for a tuition waiver, but very few students in the study's control group were in that program.[10]

Since a relatively small proportion of program group members received a tuition waiver, that component of ASAP likely contributed less to the overall service contrast than some of the other components. The availability of a tuition wavier as part of ASAP's package of services, however, may have affected even students who did not receive it. Some students may have been more likely to enroll in college (and enroll full time) if they knew they would not need to worry about how they might cover their tuition and fees. (If an ASAP-like program were provided to a group of students whose financial aid was less likely to cover their tuition and fees in full, the tuition waiver might make a bigger difference; it would then also cost more.)

Free MetroCards

ASAP: ASAP provides students with free monthly MetroCards, contingent on participation in key program services, for use on New York City subways and buses. When the study began in spring 2010, a monthly MetroCard cost $89. By December 2010, the cost had increased to $104, and by the end of the three-year follow-up period in summer 2013, the cost was $112. At each college, the ASAP office distributed MetroCards to students each month. ASAP students were eligible for MetroCards regardless of the amount of financial aid they received.

As discussed above, ASAP linked students' receipt of MetroCards with successfully meeting program requirements. ASAP advisers reported that they often used the MetroCard as an incentive to encourage compliance, reminding students that if they did not meet program requirements, they would not receive a MetroCard for the following month. Advisers said that they sometimes withheld MetroCards for noncompliance, but the vast majority of students in ASAP received a MetroCard in most or all of the months in which they were taking classes (not shown in a table).

Service contrast: Based on MDRC's field research, monthly MetroCards were not provided to non-ASAP students. Table 3.7 shows that almost all program group students (93

[10]Based on CUNY Institutional Research Database data, 4 percent of control group members participated in College Discovery during the follow-up period for this report.

Evaluation of Accelerated Study in Associate Programs (ASAP) for Developmental Education Students

Table 3.7

Students' First-Year Experiences: Financial Supports

Three-Year Impacts Report

Outcome (%)	Sample Size	Program Group	Control Group	Difference	P-Value
Received financial assistance with transportation	729	93.4	7.1	86.3 ***	0.0000
Received all textbooks free of charge	729	76.9	5.7	71.2 ***	0.0000
Survey sample size	742	384	358		

SOURCE: MDRC calculations from the MDRC student survey.

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 site and cohort.

percent) reported on the MDRC student survey that they had received financial assistance with transportation during their first year in the study. In sharp contrast, very few control group members (7 percent) reported that they had received any financial assistance with transportation. This finding indicates a substantial difference in the experiences of ASAP students compared with non-ASAP students. To see how one student responded to the MetroCard, see Box 3.4.

Free Use of Textbooks

ASAP: ASAP provides free use of textbooks for all courses for participating students. During the study period, at the start of each semester, the ASAP office provided paperwork to students listing their courses for the semester. The students took the paperwork to the college bookstore where they picked up their books. Students had to return all their textbooks by the end of the semester, or else they were charged for them. ASAP staff estimated that textbooks for a full-time course load at CUNY's community colleges might cost about $270 a semester.

Service contrast: Based on MDRC field research, students outside of ASAP did not receive free textbooks for their courses. Table 3.7 shows that more than three-fourths of the program group students reported receiving all of their textbooks for free during their first year

Box 3.4

Javier and the Value of the MetroCard Incentive

Javier is a Latino man who enrolled in community college immediately after high school. He was not interested in college, but his parents, who do not have college degrees themselves, convinced him it was important to continue his education. Javier took the CUNY placement exam and found out that he would have to take developmental courses in reading and math.

Javier had struggled with math throughout high school and continued to struggle in college, failing his developmental math course twice before his ASAP adviser suggested he retake the course during an intersession, when he could focus on just that class. That time, he passed and got through the requirement.

Javier's ASAP adviser found that he really struggled to motivate himself, since he was not very interested in his chosen major or in the classes he had to take. He had followed his parents' advice to enroll in college after high school, but he did not want to continue on to a bachelor's degree. Javier planned to enter the workforce as soon as he got his associate's degree. His adviser talked with him about the bigger picture of higher education and careers, but Javier felt completely burned out on school.

Although Javier was not interested in many of his classes, he was highly motivated by the MetroCard incentive and always made sure to meet the minimum requirements to receive it. He enrolled full time, attended advising as required, met with the career and employment specialist each semester, and attended tutoring for his developmental courses. His adviser said that these benchmarks, linked to receipt of the MetroCard, were the only things keeping him on track academically. Javier himself even admitted he could have used more motivation in school.

Javier received his associate's degree at the end of his third year, exactly on track with ASAP's deadline. He then entered the workforce.

in the study, compared with only a small proportion of control group students. Again, this result represents a substantial difference in the experiences of ASAP students and non-ASAP students.

ASAP Transfer Scholarship

Each year, a small number of ASAP students received the ASAP Transfer Scholarship, which provided selected students with a 3.0 GPA or better a $500 per semester scholarship for four semesters to attend CUNY colleges and complete their four-year degrees. Scholarship recipients could also receive academic advising in addition to the advising offered by the four-year schools. Approximately eight students received this scholarship each year.

Student Finances

ASAP's tuition waiver, transportation assistance, and free use of textbooks were intended to facilitate and support students' participation in college, particularly full-time enrollment. As discussed above, all students whose financial aid did not cover their tuition and fees received a tuition waiver, and most if not all students received free MetroCards and free use of textbooks. Table 3.8 shows some measures from the MDRC student survey that indicate how sample members financed college and to what degree different financial issues affected their schooling and provide information about their employment.

Students in the program group were much less likely than students in the control group to report that they relied on their parents, relatives, or friends to help pay for college.[11] Program group members were also less likely than control group members to say that they relied on student loans. These findings suggest that ASAP's tuition waiver and possibly other financial supports affected how some students financed their education, reducing their need to take on debt and accept help from others.

As Table 3.8 shows, one in every five control group members (21 percent) reported that they chose not to register for college full time because they could not afford it. Very few program group members (6 percent) said the same. Facilitating and supporting full-time enrollment is central to ASAP's program model, and these findings suggest that the program made a big difference for students. (Chapter 4 discusses the program's impact on actually enrolling full time.) Table 3.9 also shows that almost half of program group members (49 percent) said they had few or no concerns about their ability to pay for college, compared with only about one-third (36 percent) of control group members.

Almost one-fourth of control group students (23 percent) said that they often or very often did not buy textbooks because of the cost. The ASAP program, with its free use of textbooks, reduced that proportion substantially — only 11 percent of the program group students reported the same. Very few students in the control group reported missing class often or very often because they could not pay for transportation; the proportion of program group students who reported missing class for those reasons was similar. More program group students than control group students, however, reported that they never missed class because they could not pay for transportation (77 percent, compared with 61 percent; not shown in the table).

[11]It is not clear why 8 percent of control group members said they received ASAP financial resources.

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Table 3.8

Students' First-Year Experiences: Student Finances

Three-Year Impacts Report

Outcome	Sample Size	Program Group	Control Group	Difference	P-Value
Funding sources for college (%)					
ASAP financial resources	730	83.0	8.2	74.8 ***	0.0000
External financial aid[a]	730	90.4	87.3	3.2	0.1766
Student loans[b]	730	5.8	9.7	-3.8 *	0.0528
Parents, relatives, partners, or friends	730	17.0	28.3	-11.4 ***	0.0002
Employment	730	19.9	24.1	-4.2	0.1674
Credit cards	730	5.0	5.7	-0.7	0.6878
Personal savings	730	15.4	17.6	-2.2	0.4351
Other	730	0.8	0.9	-0.1	0.9275
Chose not to register for college full time because could not afford to (%)	718	5.7	20.8	-15.2 ***	0.0000
Often or very often didn't buy textbooks because of the cost (%)	727	11.1	23.1	-12.0 ***	0.0000
Missed class often or very often because needed to work (%)	727	5.8	5.4	0.4	0.8152
Missed class often or very often because couldn't pay for transportation (%)	729	3.7	5.7	-2.0	0.2130
Had few or no concerns about ability to pay for college (%)	714	49.4	36.1	13.4 ***	0.0003
Had a job (%)					
First semester	716	48.8	53.7	-4.9	0.1931
Second semester	714	49.9	53.1	-3.2	0.3950
Among those who worked, average hours worked per week					
First semester	*359*	*27.0*	*28.2*		
Second semester	*364*	*25.4*	*28.5*		
Among those who enrolled, average hours per week spent preparing for class					
First semester	*685*	*13.1*	*13.8*		
Second semester	*595*	*13.9*	*13.7*		
Survey sample size	742	384	358		

(continued)

Table 3.8 (continued)

SOURCE: MDRC calculations from the MDRC student survey.

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 site and cohort.

Italic type indicates nonexperimental data. Significance tests are not calculated for nonexperimental data.

[a]This category includes federal Pell Grants, New York State Tuition Program, Discovery financial resources, educational grants, and private grants.

[b]This category includes Perkins Loans, Federal Direct Loans, and private bank loans.

The proportion of program group and control group students who reported working in the first and second semesters was similar — roughly half of each group — and, among those who worked, the average number of hours worked was similar for the two groups. The proportion of students in the program group and control group who said they missed class often or very often because they needed to work was also similar. Although it seems ASAP's financial benefits would reduce students' need to work and reduce their likelihood of missing class because of work, the survey responses suggest otherwise for the evaluation sample. It may be that because the students in the evaluation sample had relatively low incomes, some students in both research groups needed to work to support themselves and their families.

Overall, the MDRC student survey revealed some notable differences between the two research groups on financial issues. Important, ASAP altered how students financed their education and reduced the likelihood students chose not to register full time or buy textbooks because of the cost. The results suggest that ASAP's financial resources made a big difference for students. In CUNY's periodic student surveys and focus groups, as well in the MDRC student survey, students said that the program's financial resources were one of the most helpful program components.[12]

Experiences in College

As this chapter has explained, ASAP differed from the usual college services in many ways. Each previous section examined a particular component of the program. This section examines some aspects of students' overall experiences in college.

[12]Linderman and Kolenovic (2012).

Evaluation of Accelerated Study in Associate Programs (ASAP) for Developmental Education Students

Table 3.9

Students' First-Year Experiences: Engagement in College

Three-Year Impacts Report

Outcome (%)	Sample Size	Program Group	Control Group	Difference	P-Value
Rated educational experience good or excellent	723	86.1	72.7	13.4 ***	0.0000
Integration and sense of belonging at school [a]					
Low	723	9.1	16.4	-7.3 ***	0.0033
High	723	18.7	17.2	1.5	0.6052
Had a college employee to turn to for advice	722	86.9	57.7	29.2 ***	0.0000
College faculty or staff often or very often made student feel important/valued	721	74.3	43.8	30.5 ***	0.0000
Had all or most services and supports needed to succeed	724	89.7	57.0	32.7 ***	0.0000
Had a good friend at school	722	80.0	76.1	4.0	0.1990
Highest degree student planned to earn					
No degree	731	3.7	3.1	0.6	0.6565
Associate's	731	8.5	9.3	-0.7	0.7270
Bachelor's	731	31.9	32.4	-0.5	0.8909
Master's	731	36.5	41.9	-5.4	0.1331
Professional or doctorate	731	19.4	13.3	6.1 **	0.0261
Survey sample size	742	384	358		

SOURCE: MDRC calculations from the MDRC student survey.

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 site and cohort.

[a]The scale is based on responses to nine questions about the sense of integration with and belonging to the school community. "Low" is the percentage of sample members scoring one standard deviation below the mean, indicating less integration and sense of belonging; "high" is the percentage of sample members scoring one standard deviation above the mean, indicating greater integration and sense of belonging. The questions are listed in Appendix B.

As the first row of Table 3.9 shows, 86 percent of program group students rated their educational experience as good or excellent after a year, compared with 73 percent of control group students. The difference of 13 percentage points is notable, especially given the relatively high level of satisfaction among control group students.

The second outcome in Table 3.9 is a scale based on nine survey questions intended to measure a student's feeling of integration and sense of belonging at school. Questions in the scale included "I feel that I matter to the college instructors, staff, and other students" and "College has the feeling of a community, where many people share the same goals and interests." (See Appendix B for a full list of the questions and a description of how the scale was created.) ASAP decreased the proportion of students who reported having a low sense of integration and belonging, but it did not increase the proportion at the high end of the scale.

Table 3.9 presents two outcomes that are focused on students' perceptions of college staff. Many more program group members than control group members said that they had someone at the college they could turn to for advice (87 percent, compared with 58 percent), and many more program group members said that they often or very often felt valued by college faculty or staff (74 percent, compared with 44 percent). These large differences likely reflect the more frequent and closer contact that program group students had with advisers and possibly career staff and tutors, compared with control group students. Almost all program group students — 90 percent — reported that they had most or all of the services and supports they needed to succeed. Only 57 percent of control group members reported the same. This finding suggests that ASAP, with its array of services, largely succeeded in meeting students' perceived need for support.

The survey also asked a question about sample members' friendships. A total of 76 percent of control group students said they had a good friend at school; ASAP did not significantly alter that proportion. Given that most control group students said they had a good friend, it may not be surprising that the program did not have a measurable impact on student friendships. This finding, however, considered with the findings discussed earlier, suggests that ASAP altered students' connections with college staff more than it altered their connections with other students.

The final outcome in the table shows sample members' responses to a question on the survey about the highest degree they intended to earn. At the start of the study, the program group and control group responded similarly to this question. After one year, more program group members than control group members said they intended to earn a professional or doctoral degree. In other words, ASAP had an effect on students' goals.

Looking to the Next Chapter

Overall, ASAP provided a markedly different experience for students from that which the usual college services provided. The next chapter shifts the discussion from the implementation of ASAP and the service contrast to the effects of the service contrast on students' academic outcomes. By comparing outcomes for the program group and control group students, the chapter tells the story of how the large differences in services and supports translated into large differences in persistence in college and graduation.

Chapter 4

Effects on Educational Outcomes

This chapter presents findings on ASAP's estimated effects on students' academic progress and completion during the three years after they entered the evaluation — the three years that ASAP services were offered to program group members.[1]

The chapter begins by first briefly summarizing ASAP's three-year effects. Next, details of these effects are provided with respect to enrollment, credit accumulation, and graduation, followed by an assessment of ASAP's effects for select student subgroups. Finally, considerations of what may occur in the future are proposed.

Summary of Findings

Students offered ASAP achieved much greater academic success compared with students offered the usual college services. Table 4.1 summarizes ASAP's effects on three key academic outcomes after three years. Recall that ASAP's goal is to graduate students within three years. Graduating in three years is a substantial hurdle for students who begin college with developmental education needs, an eligibility requirement for this study. Nationally, only about 15 percent of students with developmental needs attending two-year colleges earn a certificate or degree in this time frame.[2]

- **ASAP substantially increased students' likelihood of persisting in school.**

[1]Unless specifically noted, analyses presented in this chapter include the full sample of study participants. Analyses reflect the estimated effect of being randomly assigned to participate in ASAP. This estimated effect is not the same as the estimated effect of participating in ASAP. The analyses are "intent-to-treat" as described, in principle, by Bloom (1984). Some individuals assigned to the program group did not participate in any part of ASAP (a very small number) or only participated in some parts or in some semesters. They are all included in the program group for the analyses. Thus, the estimand is the effect of being assigned to ASAP reflects the real world, where adherence to program requirements and receipt of services are imperfect. Conducting analyses on the full sample ensures a comparison of two groups that were similar at the outset of the study. For ease of exposition, "ASAP's effect" or "the effect of ASAP" are used in this chapter to refer to the estimated effect of being assigned to ASAP.

[2]These data are based on a computation of beginning postsecondary students data from the U.S. Department of Education's National Center for Education Statistics (NCES) using the NCES QuickStats website (http://nces.ed.gov/datalab/quickstats). This statistic refers to the percentage of students who earned a certificate or degree anywhere through 2006, among students whose first institution level in 2003-2004 was a two-year college and who took any remedial courses in 2004.

Evaluation of Accelerated Study in Associate Programs (ASAP) for Developmental Education Students

Table 4.1

Three-Year Summary Table

Three-Year Impacts Report

Outcome	Program Group	Control Group	Difference		P-Value
Sessions enrolled (out of 12)	6.6	5.4	1.2	***	0.0000
Total credits earned	47.7	39.0	8.7	***	0.0000
Earned a degree from any college (%)	40.1	21.8	18.3	***	0.0000
Sample size (total = 896)	451	445			

SOURCE: MDRC calculations from CUNY Institutional Research Database (IRDB) 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 site and cohort.
Enrollment is based on courses in which students are still enrolled as of the end of the add/drop period.

During the three-year follow-up period composed of 12 sessions of school,[3] program group members enrolled in 1.2 more sessions than did their control group counterparts. This difference represents a 22 percent increase over the control group base of 5.4 sessions enrolled.

- **ASAP had a large positive effect on total credit accumulation.**

After three years, control group students earned an average of 39.0 total credits. Program group students earned an average of 47.7 total credits. The difference of 8.7 total credits represents a 22 percent increase in credit accumulation over three years.

- **Enrollment and credit accumulation during intersessions played a key role in ASAP's effectiveness.**

Compared with their control group counterparts, students in the program group were much more likely to enroll during intersessions, especially during the first two years of the

[3]Sessions are defined in Box 4.1.

program. Moreover, 28 percent of the overall effect on credit accumulation occurred during these often overlooked sessions.

- **ASAP dramatically increased students' likelihood of graduating within three years of entering the program.**

Over three years, 40 percent of program group members graduated compared with 22 percent of control group members for an effect on graduation rates of 18 percentage points. Effects of this magnitude on graduation rates are unprecedented to date in MDRC's randomized trials at community colleges.

- **ASAP increased students' likelihood of enrolling at a four-year college within three years of entering the program.**

Not only do more ASAP students earn an associate's degree, but more of them continue on to four-year institutions.

Overall Program Effects on Academic Outcomes

Enrollment

Figure 4.1 (and Appendix Table C.1) displays enrollment rates at any CUNY college during the first three years after students were randomly assigned. Each year is split into two semesters, and each semester is divided into a main session and a shorter intersession. (See Box 4.1 for a description of main sessions and intersessions.) The main session of the second semester serves as an example of how to understand the information presented in Figure 4.1. During this session, 90.3 percent of program group members (the black bar) and 80.7 percent of control group members (the white bar) enrolled at a CUNY college. The difference of 9.6 percentage points (displayed above the two bars) represents ASAP's estimated effect on enrollment rates during that session.[4]

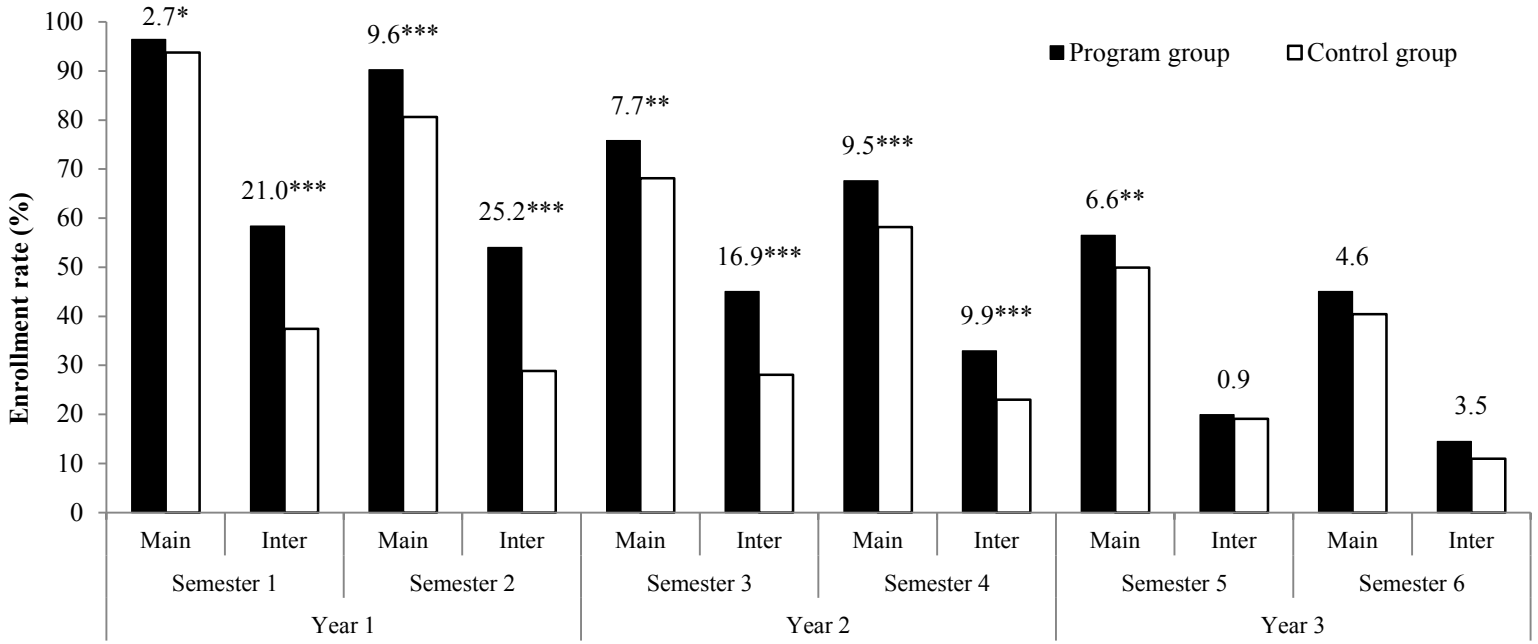
The overall pattern of enrollment (for the full sample) is that students enroll at much higher rates during main sessions compared with intersessions, and enrollment rates decrease over time as students drop out or in later semesters graduate.

[4]A generalized linear model is used to estimate all effects presented in this report. The estimation model includes college-by-cohort covariates. The probability of being assigned to the program group was the same across all college-by-cohort combinations. Consequently, the estimator of the pooled average effect weighs each college-by-cohort-specific effect estimate by its sample size.

Figure 4.1

Three-Year Enrollment at CUNY Colleges

Three-Year Impacts Report



SOURCE: MDRC calculations from CUNY Institutional Research Database (IRDB) data.

NOTES: 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 site and research cohort.

Enrollment is based on courses in which students are still enrolled as of the end of the add/drop period.

"Main" represents the main session for the semester. "Inter" represents the intersession for the semester.

Box 4.1

Timing of Academic Semesters

Most of the analyses in this report combine outcomes for the study's two cohorts of students, relative to when students enrolled in the study. For the first cohort, the first semester of the follow-up period refers to spring 2010, the second semester refers to fall 2010, and so on. For the second cohort, the first semester refers to fall 2010, the second semester refers to spring 2011, and so on.

At two of the three colleges in the evaluation, the academic calendar includes a fall semester and a spring semester. Both fall and spring are composed of two sessions: a 12-week session followed by a 6-week session. In this report, the longer first part of the semester is referred to as the "main session," and the shorter second part is referred to as the "intersession." The 12-week sessions tend to have higher enrollment rates than the 6-week sessions. However, the 6-week sessions at these colleges typically have higher enrollment rates than winter and summer sessions at other colleges.

The third college follows a more traditional academic calendar, with a 16-week fall semester, a 3-week winter intersession, a 16-week spring semester, and two 6-week summer sessions. The fall and spring semesters have much higher enrollment rates than winter and summer. In order to discuss comparable time periods across colleges, the analyses in this report combine the fall and winter semesters into "fall" and combine the spring and both summer sessions into "spring." (If a student attended any classes at another CUNY college, their semesters are handled the same way.) In the report, this college's fall and spring semesters are referred to as main sessions, and the winter and summer as intersessions.

The table below shows how the semesters are defined in the report for each cohort of sample members.

	2010				**2011**	
	Spring Semester		**Fall Semester**		**Spring Semester**	
	Spring Session	***Summer Session***	***Fall Session***	***Winter Session***	***Spring Session***	***Summer Session***
Spring 2010 Cohort	First semester		Second semester		Third semester	
	Main session	*Intersession*	*Main session*	*Intersession*	*Main session*	*Intersession*
Fall 2010 Cohort			First semester		Second semester	
			Main session	*Intersession*	*Main session*	*Intersession*

ASAP consistently increased students' likelihood of enrolling at CUNY colleges, especially during the first two years of the program. During the main sessions of the second through sixth semesters, ASAP's effects on enrollment rates were 9.6, 7.7, 9.5, 6.6, and 4.6 percentage points, respectively.[5]

ASAP's effects on intersession enrollment are even more dramatic, peaking at 25.2 percentage points during the second semester.[6] The large effects on intersession enrollment during the first two years may reflect several factors: (1) control group students enrolled at low rates, leaving a large margin for improvement; (2) ASAP requires full-time enrollment (attempting 12 credits or more) and the intersession credits count toward full-time enrollment; and (3) ASAP advisers guided students to enroll during intersessions. The magnitude of the effects in the third year (during both main sessions and intersessions) is lower than in previous years. This decrease partially reflects the fact that by that time, many more ASAP students had earned an associate's degree compared with their control group counterparts (described later in detail).

Compared with the usual college services, ASAP clearly improves students' likelihood of continuing to enroll in college. The program group's enrollment rates during the first few main sessions reflect a high rate of retention. Between the first and second semesters, the program group's enrollment rate dropped only 6.2 percentage points. Between the second and third semesters, the drop in the enrollment rate was 14.5 percentage points, a much more typical decrease. While ASAP had significant positive effects on persistence, developing additional strategies to retain students at the end of their first year could be one place to focus efforts to improve enrollment rates.

Recall that to enter the MDRC evaluation, students had to be willing to enroll full time.[7] Part-time attendance is often described as a risk factor for community college students and, as noted in Chapter 1, is negatively associated with academic success. Appendix Table C.1 shows full-time enrollment at any CUNY college during the six semesters of follow-up. From the very first study semester, students offered the opportunity to participate in ASAP were more likely to enroll full time, compared with their control group counterparts (on average 12 percentage points more likely across the six semesters of follow-up).

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[5]For the final estimate of 4.6 percentage points, $p > 0.10$.

[6]For the final two intersessions, the effect estimates $p > 0.10$.

[7]Throughout this chapter, full-time enrollment is defined as attempting 12 credits or more in a semester. As explained in Box 4.1, a semester includes both the main session and intersession. Full-time enrollment status is based on total credits attempted in both the main session and intersession. For the purposes of ASAP, Kingsborough and LaGuardia Community Colleges define full time in the way it is presented in this chapter; Borough of Manhattan Community College, however, does not include the summer or winter intersessions when determining full-time status.

This study found that ASAP's combination of requirements and supports successfully increased full-time enrollment rates. The study, however, was not designed to disentangle which component(s) of ASAP caused this effect. The effect on full-time enrollment is likely the collective result of requiring students to enroll full time to remain in a desirable program, providing multiple sets of supports (financial, advising, and so forth) to enable students to meet this requirement, and encouraging students to enroll in intersessions. This result demonstrates that some students who currently enroll part time, if given the right set of requirements, incentives, and supports, would enroll full time.

Overall, during the first three years after students entered the study, which also represents the duration of ASAP services, the program had substantial effects on persistence in college.[8]

Credits Earned

Table 4.2 depicts average credits earned at CUNY colleges during the first three years after students were randomly assigned. The first panel focuses on total credits earned, which includes both developmental (or remedial) and college-level credits.[9] The second panel includes developmental credits only. The third panel highlights college-level credits only. Credits are shown marginally by session and semester, as well as cumulatively at the end of three full years. Similar results are provided with additional details in Appendix Tables C.2 (credits attempted) and C.3 (credits earned).[10] Figure 4.2 displays total cumulative credits earned by session, and Appendix Tables C.4 (credits attempted) and C.5 (credits earned) provide semester-by-semester results for cumulative credits in detail.

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[8]Appendix Table C.1 displays enrollment rates at any CUNY college, as presented in Figure 4.1, with greater detail. Appendix Table C.1 also presents enrollment rates at any college covered by the National Student Clearinghouse (NSC), which includes data on a comprehensive set of colleges throughout the United States. The NSC data are important to consider since some students transfer to non-CUNY colleges. For their part, the CUNY data allow for a useful breakdown of enrollment by intersessions and for calculation of full-time attendance, unlike the NSC data. Examining both data sources provides a comprehensive picture of enrollment patterns for the study sample. As expected, where comparable, enrollment at any NSC college is higher than enrollment at CUNY colleges alone — differences are quite small during the first four semesters. Where comparable, ASAP's estimated effects on enrollment at any college are very similar to those at CUNY colleges alone. (The greatest difference is 1.1 percentage points.) These data provide useful context when interpreting the credit accumulation results presented in the following section, which only includes credits earned at CUNY colleges.

[9]Developmental credits are credits associated with developmental reading, writing, and math courses; English as a Second Language classes; and a small number of other non-college-level courses. CUNY refers to these credits as "equated credits." These credits do not count towards a degree, but they do count towards financial aid.

[10]These tables provide additional information recommended by *The What Works Clearinghouse Reporting Guide for Study Authors*.

Evaluation of Accelerated Study in Associate Programs (ASAP) for Developmental Education Students

Table 4.2

Three-Year Credits Earned

Three-Year Impacts Report

Outcome	Program Group	Control Group	Difference	P-Value
Total credits earned				
Semester 1	11.4	9.3	2.1 ***	0.0000
Main session	9.4	7.9	1.5 ***	0.0000
Intersession	2.0	1.4	0.6 ***	0.0001
Semester 2	10.1	7.9	2.2 ***	0.0000
Main session	8.1	6.7	1.4 ***	0.0001
Intersession	2.0	1.1	0.8 ***	0.0000
Semester 3	8.9	7.2	1.7 ***	0.0002
Main session	7.3	6.1	1.3 ***	0.0011
Intersession	1.6	1.1	0.5 ***	0.0009
Semester 4	7.6	6.1	1.6 ***	0.0007
Main session	6.4	5.2	1.2 ***	0.0026
Intersession	1.2	0.8	0.4 ***	0.0034
Semester 5	5.5	4.9	0.6	0.1766
Main session	4.9	4.3	0.5	0.1367
Intersession	0.6	0.6	0.0	0.9121
Semester 6	4.3	3.8	0.5	0.2027
Main session	3.8	3.4	0.4	0.2345
Intersession	0.5	0.5	0.1	0.3871
Cumulative total credits earned[a]	47.7	39.0	8.7 ***	0.0000
Main session	40.0	33.7	6.3 ***	0.0002
Intersession	7.9	5.5	2.4 ***	0.0000
Developmental credits earned				
Semester 1	2.9	1.7	1.1 ***	0.0000
Main session	2.2	1.5	0.7 ***	0.0001
Intersession	0.7	0.2	0.5 ***	0.0000
Semester 2	1.1	0.8	0.3 **	0.0226
Main session	0.7	0.7	0.0	0.8361
Intersession	0.4	0.1	0.3 ***	0.0000
Semester 3	0.5	0.4	0.1	0.4247
Main session	0.4	0.3	0.0	0.7803
Intersession	0.1	0.1	0.1	0.2447

(continued)

Table 4.2 (continued)

Outcome	Program Group	Control Group	Difference	P-Value
Semester 4	0.2	0.5	-0.3 ***	0.0024
Main session	0.2	0.4	-0.2 ***	0.0089
Intersession	0.0	0.1	-0.1 *	0.0773
Semester 5	0.1	0.2	-0.1 **	0.0184
Main session	0.1	0.2	-0.1 **	0.0280
Intersession	0.0	0.0	0.0	0.3850
Semester 6	0.0	0.2	-0.2 ***	0.0003
Main session	0.0	0.1	-0.1 ***	0.0007
Intersession	0.0	0.0	0.0 *	0.0869
Cumulative developmental credits earned [a]	4.8	3.8	1.0 ***	0.0004
Main session	3.6	3.3	0.3	0.2204
Intersession	1.3	0.6	0.7 ***	0.0000
College-level credits earned				
Semester 1	8.5	7.6	0.9 ***	0.0065
Main session	7.2	6.4	0.8 ***	0.0055
Intersession	1.3	1.1	0.1	0.2723
Semester 2	9.0	7.1	1.9 ***	0.0000
Main session	7.4	6.0	1.4 ***	0.0000
Intersession	1.6	1.0	0.5 ***	0.0001
Semester 3	8.4	6.8	1.6 ***	0.0002
Main session	7.0	5.7	1.2 ***	0.0009
Intersession	1.4	1.0	0.4 ***	0.0019
Semester 4	7.4	5.6	1.8 ***	0.0000
Main session	6.2	4.9	1.4 ***	0.0003
Intersession	1.2	0.7	0.4 ***	0.0004
Semester 5	5.4	4.7	0.7 *	0.0837
Main session	4.8	4.1	0.7 *	0.0615
Intersession	0.6	0.6	0.0	0.8027
Semester 6	4.3	3.7	0.6 *	0.0919
Main session	3.8	3.3	0.5	0.1221
Intersession	0.5	0.4	0.1	0.2239
Cumulative college-level credits earned [a]	42.9	35.2	7.7 ***	0.0000
Main session	36.4	30.4	6.0 ***	0.0002
Intersession	6.6	4.9	1.7 ***	0.0001
Sample size (total = 896)	451	445		

(continued)

Table 4.2 (continued)

SOURCE: MDRC calculations from CUNY Institutional Research Database (IRDB) 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 site and cohort.

[a]Measures of cumulative credits earned exclude courses that are passed more than once. However, measures of cumulative credits earned in main sessions or intersessions do not exclude courses passed more than once.

In terms of total (developmental and college-level) credits earned, ASAP had a positive effect on marginal credits earned during each of the first eight sessions (two years) of follow-up. In other words, during each session, program group students earned on average more credits than control group students. Cumulatively after three years, students offered ASAP earned 8.7 more credits than their control group counterparts.[11] Program group members earned on average 47.7 credits; control group members earned on average 39.0 credits. ASAP students earned on average 22 percent more credits than their control group counterparts. Most college courses are worth three or four credits. Thus students in ASAP completed on average around two to three more courses than their control group counterparts.

Linking these findings back to the enrollment results, around 28 percent of the estimated impact on cumulative total credits earned occurred during intersessions, highlighting the importance of these often overlooked sessions.

During the first two semesters of study, ASAP had large effects on progress in developmental coursework. (See developmental credit measures in Table 4.2). This finding may reflect ASAP's emphasis on taking developmental courses early, and ASAP's requirement for students to see tutors for their developmental courses. Starting in the fourth semester, control group students began to catch up with respect to developmental credit accumulation. This finding is largely due to the fact that many ASAP students had completed their developmental coursework. Nonetheless, after three years, ASAP students earned 1.0 developmental credit more than their control group counterparts.

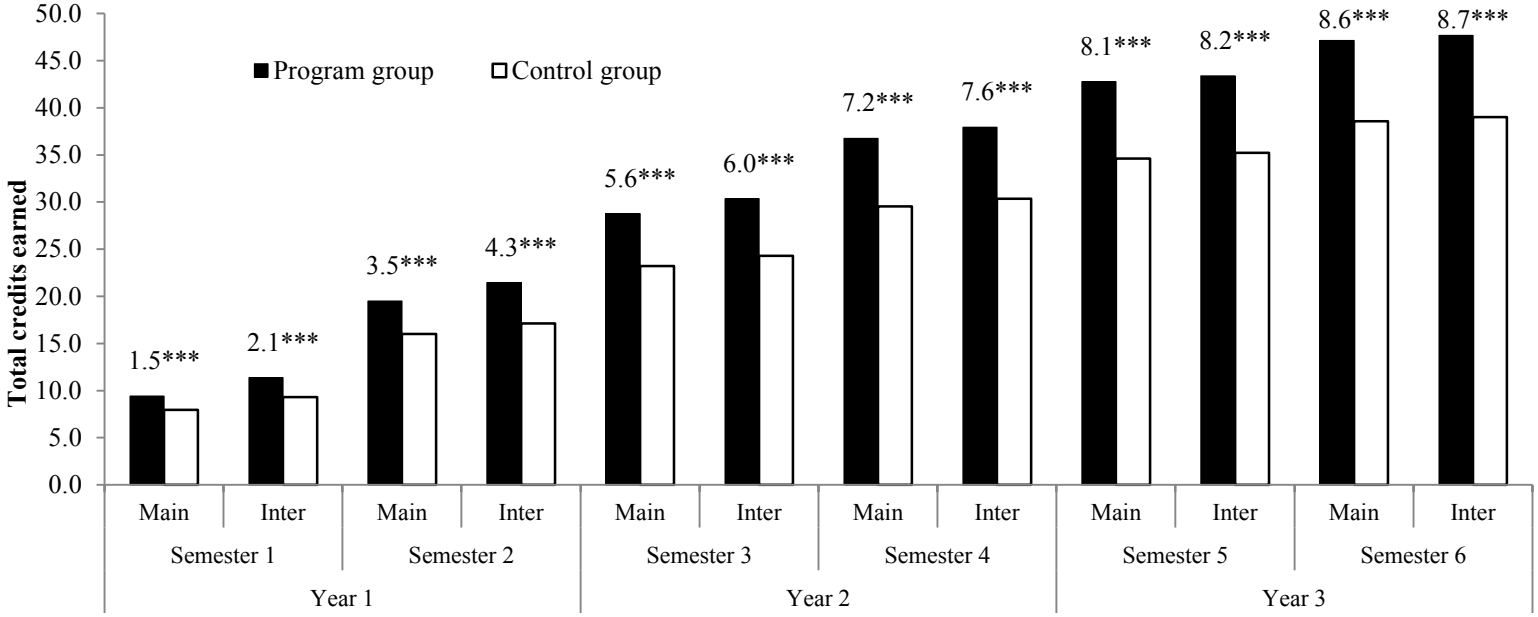
Moreover, after three years, 74 percent of program group members had completed their developmental education requirements, compared with 55 percent of control group members.

[11]A 95 percent confidence interval on this estimated effect spans the range of 4.8 to 12.5 total cumulative credits earned. In terms of an effect size, the impact on cumulative credits earned is 0.29 in effect size units.

Figure 4.2

Three-Year Total Credits Earned at CUNY Colleges

Three-Year Impacts Report



SOURCE: MDRC calculations from CUNY Institutional Research Database (IRDB) data.

NOTES: 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 site and research cohort.

"Main" represents the main session for the semester. "Inter" represents the intersession for the semester.

(See Table 4.3 for more details.) ASAP's large effect on completing developmental education requirements began in the first semester of study (17 percentage point effect), and was maintained over three years.

With respect to college-level credits, the program's effects are relatively small (although still positive and significant) during the first semester when ASAP had its largest effects on progress in developmental education. In the second, third, and fourth semesters, ASAP's effects on college-level credits earned were sizable, between 1.6 and 1.9 credits. During the fifth and sixth semesters, program group students continued to outpace their control group counterparts with respect to college-level credits earned, although more modestly. Cumulatively after three years, ASAP students earned on average 7.7 more college-level credits than their control group counterparts, representing 14 percent of the 60 college-level credits required to earn a degree.

Evaluation of Accelerated Study in Associate Programs (ASAP) for Developmental Education Students

Table 4.3

Three Year Completion of Developmental Requirements

Three-Year Impacts Report

Outcome (%)	Program Group	Control Group	Difference	P-Value
Completed developmental requirements[a]				
Semester 1	46.4	29.9	16.5 ***	0.0000
Semester 2	63.9	41.5	22.4 ***	0.0000
Semester 3	71.0	48.7	22.2 ***	0.0000
Semester 4	73.8	53.5	20.4 ***	0.0000
Semester 5	74.5	55.3	19.2 ***	0.0000
Semester 6	75.2	57.1	18.1 ***	0.0000
Sample size (total = 896)	451	445		

SOURCE: MDRC calculations from CUNY Institutional Research Database (IRDB) 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 site and cohort.

[a]Completion of developmental requirements is contingent upon passing CUNY Assessment Tests, passing the highest level of developmental education, passing a college-level class in each subject, or both. This measure includes students who passed CUNY Assessment Tests prior to the first semester.

Degree Receipt and Transfer to Four-Year Colleges

Table 4.4 provides summary information on degree receipt and enrollment in four-year colleges at any college covered by the National Student Clearinghouse (NSC). Two years after the study began, 8.7 percent of control group members had earned a degree and 14.7 percent of program group members had earned a degree. The difference of 6.0 percentage points represents the effect of ASAP on two-year degree completion.

In the three-year follow-up period, ASAP nearly doubled students' likelihood of earning a degree, increasing graduation rates by 18.3 percentage points (an 84 percent increase).[12] By the three-year mark, program group members graduated at a rate of 40.1 percent and control group members graduated at a rate of 21.8 percent. As shown in Table 4.4, nearly all of these degrees are associate's degrees.

In terms of numbers rather than percentages, among the 451 study participants who were randomly assigned to the program group, it is estimated that around 98 students (0.218 multiplied by 451) would have earned a degree within three years had they been offered the usual college services. As a result of ASAP, an estimated 84 more students graduated (0.183 multiplied by 451), for a total of 181 graduates.[13]

Although ASAP's effect on three-year graduation rates is 18.3 percentage points, ASAP's effect on earning 60 college-level credits or more — the number of credits typically required to earn a degree — is only 11.4 percentage points (not shown in tables).[14] There are several possible explanations why ASAP's effect on degree completion is 7.0 percentage points greater than ASAP's effect on earning 60 college-level credits or more.[15]

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[12]The academic outcomes of program group members presented in this report and other MDRC reports from the ASAP random assignment evaluation will not align exactly with the academic outcomes for ASAP students presented in reports from CUNY's internal evaluation of ASAP because the groups of students examined differ somewhat. First, MDRC's outcomes reflect the academic progress of all students who are part of the random assignment study. During the first study semester, 16 program group students did not enroll in college and 7 enrolled in college but not in ASAP. These students are included in MDRC's analyses because they are critical for maintaining the integrity of the experiment. CUNY's evaluation, in contrast, only includes students who were enrolled in ASAP as of CUNY's official enrollment census date. Second, ASAP serves some undocumented immigrants. Because those students are not eligible for federal financial aid, they are not eligible for the ASAP tuition waiver. Inasmuch as MDRC's evaluation was designed to study the effects of the full package of ASAP services, undocumented immigrants were not included in the MDRC research sample. Those students are included in CUNY's analysis.

[13]This estimate assumes that ASAP did not cause any students who otherwise would have graduated not to graduate.

[14]This number includes college-level credits earned before random assignment. The estimated effects on degree completion include degrees earned at any college, whereas credit accumulation occurred at CUNY colleges only. Only one student earned a degree outside of CUNY.

[15]A very small part of this misalignment may have to do with data limitations.

Evaluation of Accelerated Study in Associate Programs (ASAP) for Developmental Education Students

Table 4.4

Three-Year Degree and Transfer to Any Four-Year College

Three-Year Impacts Report

Outcome (%)	Program Group	Control Group	Difference	P-Value
Earned a degree from any college[a]				
Semester 1	0.0	0.0	0.0	--
Semester 2	0.2	0.0	0.2	0.3175
Semester 3	2.9	1.1	1.7 *	0.0640
Semester 4	14.7	8.7	6.0 ***	0.0053
Semester 5	29.5	15.3	14.2 ***	0.0000
Semester 6	40.1	21.8	18.3 ***	0.0000
Highest degree earned				
Certificate	0.0	0.0	0.0	--
Associate's degree	39.5	21.8	17.7 ***	0.0000
Bachelor's degree or higher	0.7	0.0	0.7 *	0.0832
Enrolled in a four-year college				
Semester 1	0.2	0.7	-0.4	0.3174
Semester 2	0.7	0.9	-0.2	0.7072
Semester 3	1.6	1.3	0.2	0.7675
Semester 4	5.1	5.4	-0.3	0.8448
Semester 5	17.1	12.5	4.6 *	0.0519
Semester 6	25.1	17.3	7.8 ***	0.0040
Sample size (total = 896)	451	445		

SOURCE: MDRC calculations from CUNY Institutional Research Database (IRDB) 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 site and cohort.

[a]Degree receipt is cumulative. Those who earned a degree in an earlier semester are counted as having a degree in subsequent semesters.

First, ASAP may successfully get students to take the right combinations of credits in order to earn a degree — not all combinations of credits meet degree requirements. ASAP's significant additional academic advising may have informed students' decisions. ASAP's early registration policies may also have contributed by enabling students to get into the courses they

needed to graduate. Moreover, ASAP may have affected students' choice of major or the timing in which their major was determined.

Second, ASAP may help students who have completed the requirements to earn an associate's degree to take the final steps necessary to make the degree official (for example, completing forms and paperwork). Data show that 9.2 percent of control group members had earned more than 60 college-level credits and yet did not earn a degree. In contrast, only 5.1 percent of program group students had earned more than 60 college-level credits and yet did not earn a degree. The 4.1 percentage point difference could reflect ASAP helping students take the right combination of courses to earn a degree, assisting them with the final steps required to make a degree official, or both.

The last panel of Table 4.4 presents enrollment in four-year colleges and universities covered by the NSC. During the sixth semester of study, one in four program group students was enrolled at a four-year college compared with one in six control group students. ASAP is not only helping more students earn associate's degrees; many of these students are continuing on to four-year institutions.

When program developers initially conceived ASAP, they had in mind the ambitious goal to graduate 50 percent of participants within three years of starting the program — a goal that CUNY's internal analyses confirm was met for many ASAP cohorts. Important, ASAP's target was set at a time when ASAP served only students without developmental course requirements. In contrast, MDRC's evaluation of ASAP included a sample of 896 students, the vast majority of whom required one or two developmental courses. The ambitious goal of achieving a 50 percent graduation rate should be considered in this light.

While ASAP may not have achieved the goal of a 50 percent graduation rate at these three colleges for these cohorts, the program's effects are dramatic and unparalleled when compared with other programs in higher education that MDRC has evaluated using experimental methodology on a large scale.

Subgroup Analyses

In addition to examining the overall average effect of ASAP, the study also measured whether the program was effective for various types of students. ASAP's effects were estimated separately by gender, whether students had earned a high school diploma before enrolling in the study, the number of developmental courses students needed at baseline, and students' entry

cohort (spring or fall).[16] A formal test was also conducted to assess the statistical significance of differences in ASAP's effects between groups (for example, whether ASAP was more effective for women than for men).

Table 4.5 presents cumulative credits earned over three years for different subgroups. For example, after three years, women in the program group earned 48.9 credits, whereas women in the control group earned 40.4 credits. Thus, ASAP is estimated to have increased three-year credit accumulation for women by 8.5 total credits on average. Men in the program group earned on average 45.6 credits after three years, whereas men in the control group earned 36.8 credits after three years. Thus, ASAP's estimated effect on three-year credit accumulation for men is on average 8.8 credits. The asterisks (denoting statistical significance) and small p-value for estimated effect indicate that ASAP was beneficial to both women and men.

In terms of credit accumulation, ASAP was effective for all of the study's subgroups. The last column of the table provides the p-value for a test of differential effects: for example, it tests for evidence that the estimated effect for women (8.5 total credits) was different from the estimated effect for men (8.8 total credits). Even though ASAP was effective for both women and men, it is theoretically possible it could have been more effective for one gender than the other. No significant evidence indicates that ASAP was more effective for any of the study's subgroups compared with another.

Table 4.6 presents similar subgroup information with respect to degree completion after three years. In terms of degree completion, ASAP's effects are positive and statistically significant for all subgroups examined — men, women, those with and without a high school diploma at baseline, those with zero or one developmental education need at baseline, those with two or more developmental education needs at baseline, and fall and spring cohorts.[17]

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[16]There was no strong a priori hypothesis why ASAP would be more effective for any particular subgroup. ASAP's comprehensive services would seem potentially beneficial to most types of students. These groups were explored (with the exception of the entry cohort) because the average outcomes of the groups tend to vary in community colleges. For example, students with fewer developmental requirements tend to outperform students with more developmental requirements. Additional subgroup analyses of interest were not conducted owing to data restrictions.

[17]With respect to the subgroups investigated, no clear evidence indicates that ASAP was more effective for any one of these groups. It is worth noting that this evaluation's sample size is not large enough to detect differential effects among subgroups that many people would consider practically significant. For example, there is a nearly 9 percentage point difference in ASAP's estimated three-year graduation effects for students without a high school diploma (11.6 percentage points) and those with a high school diploma (20.5 percentage points). If this difference were real, it would be noteworthy. However, since the estimated effects for each group are not very precise (there were only 227 sample members without a high school diploma at baseline), an estimated difference in effects of 9 percentage points could easily occur by chance, even if the program was exactly equally effective for both groups. Thus, what is noteworthy with regards to the subgroup findings is the evidence that ASAP had large positive effects for every specified subgroup (gender, high school diploma status at baseline, and developmental courses needed at baseline).

Evaluation of Accelerated Study in Associate Programs (ASAP) for Developmental Education Students

Table 4.5

Total Credits Earned After Three Years: Variation in Effects by Student Characteristics

Three-Year Impacts Report

Student Characteristic	Sample Size	Average Credits Earned: Program Group	Average Credits Earned: Control Group	Difference	P-Value for Difference	P-Value for Differential Estimated Effects
Gender						0.9519
Female	556	48.9	40.4	8.5 ***	0.0005	
Male	340	45.6	36.8	8.8 ***	0.0075	
Sample size	896					
Earned high school diploma at baseline[a]						0.8003
No	227	44.0	36.2	7.8 *	0.0504	
Yes	669	48.9	40.0	8.9 ***	0.0001	
Sample size	896					
Number of developmental courses needed at baseline						0.4353
1[b]	331	52.4	43.9	8.6 ***	0.0049	
2[c]	466	44.3	39.0	5.4 *	0.0535	
Sample size	797					
Cohort						0.5543
Spring 2010 cohort	327	48.9	38.7	10.2 ***	0.0016	
Fall 2010 cohort	569	47.0	39.2	7.8 ***	0.0016	
Sample size	896					

(continued)

Acceleration and Control Group Catch-Up

The preceding sections describe ASAP's positive effects on important academic outcomes for a variety of student types over three years. ASAP's effect on earning a degree within three years is large, at over 18 percentage points. That said, when considering the potential benefits of ASAP, a perspective beyond three years is important. For example, consider the two following hypothetical scenarios. In one scenario, the control group manages to catch up to the program group in the

Table 4.5 (continued)

SOURCE: MDRC calculations from CUNY Institutional Research Database (IRDB) 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.

A two-tailed t-test was applied to differences of impacts between subgroups. Statistical significance levels are indicated as: ††† = 1 percent; †† = 5 percent; † = 10 percent. For the measures presented in this table, no statistically significant differences between subgroups were observed.

Estimates are adjusted by site and cohort.

[a]Students shown as not having a high school diploma include those who earned no degrees, those who earned a General Educational Development (GED) certificate, and those who are missing degree information. Students shown as having a high school diploma are those who earned a high school diploma, an occupational or technical certificate, or another, unspecified higher degree.

[b]This group includes a small number of students who had no developmental need at baseline (about 5 percent of the 331 students).

[c]This group includes a small number of students who needed three or more developmental courses at baseline (about 14 percent of the 466 students).

fourth year after random assignment with respect to graduation rates. Such a finding would imply that ASAP enabled students who would have graduated in four years to graduate more quickly. (That is, it accelerated graduation.) In another scenario, the graduation effect remains the same or grows in the fourth year after random assignment and beyond. Such a result would mean that ASAP enabled students who otherwise would never have graduated to earn a degree. Accelerating the time it takes students to earn a degree (first scenario) is an important, noteworthy accomplishment that could result in significant benefits (financial and otherwise). However, the potential benefits of enabling students who otherwise would never have graduated to earn a degree are even larger. Long-term follow-up on the study sample will provide the best evidence on this matter. In the meantime, it may be useful to examine students' final academic status at the three-year mark in more detail in order to speculate what may come in the near future. The current evidence suggests that ASAP enabled many students to graduate who otherwise would never have graduated. Moreover, although the control group may begin to catch up over time, such catching up is unlikely to be substantial within the next year of follow-up.

Table 4.7 presents students' final status at the end of the current follow-up period. The second panel divides holders of an associate's degree into three categories based on their enrollment status during the last semester of the three-year follow-up period. Notably, 20.6 percent of the program group earned an associate's degree and were enrolled in a four-year college during the final semester of study, compared with 11.2 percent of control group members. Time will tell whether this difference will grow or shrink, and whether it might lead to significant effects on earning a bachelor's degree.

Evaluation of Accelerated Study in Associate Programs (ASAP) for Developmental Education Students

Table 4.6

Degrees Earned at Any College After Three Years: Variation in Effects by Student Characteristics

Three-Year Impacts Report

Student Characteristic	Sample Size	Earned a degree (%) Program Group	Control Group	Difference	P-Value for Difference	P-Value for Differential Estimated Effects
Gender						0.7752
Female	556	41.6	24.3	17.3 ***	0.0000	
Male	340	37.3	18.2	19.1 ***	0.0001	
Sample size	896					
Earned high school diploma at baseline[a]						0.1870
No	227	31.3	19.7	11.6 **	0.0467	
Yes	669	43.1	22.5	20.5 ***	0.0000	
Sample size	896					
Number of developmental courses needed at baseline						0.3902
1[b]	331	48.7	27.0	21.7 ***	0.0001	
2[c]	466	35.5	19.5	16.0 ***	0.0001	
Sample size	797					
Cohort						0.2154
Spring 2010 cohort	327	44.0	20.8	23.3 ***	0.0000	
Fall 2010 cohort	569	37.8	22.4	15.5 ***	0.0001	
Sample size	896					

(continued)

Some students in both the program and control groups earned an associate's degree and did not enroll during the last semester of study, 10.0 percent of the program group compared with 4.7 percent of the control group. For these students, the associate's degree may have been terminal. Recall that ASAP's effect on enrollment rates, while still positive, was at its lowest during the final semester. (In fact, the effect was not statistically significant.) Part of the explanation may be that many more program group members had earned an associate's degree by the three-year mark and subsequently ended their studies.

Table 4.6 (continued)

SOURCE: MDRC calculations from CUNY Institutional Research Database (IRDB) 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.

A two-tailed t-test was applied to differences of impacts between subgroups. Statistical significance levels are indicated as: ††† = 1 percent; †† = 5 percent; † = 10 percent. For the measures presented in this table, no statistically significant differences between subgroups were observed.

Estimates are adjusted by site and cohort.

[a]Students shown as not having a high school diploma include those who earned no degrees, those who earned a General Educational Development (GED) certificate, and those who are missing degree information. Students shown as having a high school diploma are those who earned a high school diploma, an occupational or technical certificate, or another, unspecified higher degree.

[b]This group includes a small number of students who had no developmental need at baseline (about 5 percent of the 331 students).

[c]This group includes a small number of students who needed three or more developmental courses at baseline (about 14 percent of the 446 students).

Might the Control Group Catch Up?

The third panel of Table 4.7 is most relevant to the possibility that the control group might catch up to the program group with respect to degree attainment. The first row shows that at the three-year mark 59.9 percent of program group members had not earned a degree, compared with 78.2 percent of control group members (a difference of 18.3 percentage points). Just over half of this effect (-9.3/-18.3) came from students who had not earned a degree and were not enrolled during the final semester of study. While it is theoretically possible that students who had not earned a degree and did not enroll in the final semester could return to school and earn a degree, most likely they will not. Thus, it is probable that ASAP's effect on earning an associate's degree will remain above 9 percentage points, at a minimum, in the long term.

Important to the possibility of the control group catching up, 7.0 percentage points more control group students without a degree were enrolled in a two-year college during the final semester of study. This gap may represent some potential for the control group to catch up since these students were continuing to make progress toward an associate's degree. Of course, not all students who enrolled during the final study semester are equally likely to graduate in the short term. For example, it is reasonable to expect that only students with 48 college-level credits or more are within reach of completing a degree in the next semester. In total, 12.6 percent of the control group appeared to be within reach of earning an associate's degree within one semester. This group included those students who had not yet earned a degree, were enrolled at a two-year college during the final study semester, and had earned more than 48 college-level credits by the end of three years. In the program group, 8.7 percent of students met those same criteria. The

Evaluation of Accelerated Study in Associate Programs (ASAP) for Developmental Education Students

Table 4.7

Status at Three Years

Three-Year Impacts Report

Outcome (%)	Program Group	Control Group	Difference	P-Value
Bachelor's degree earned	0.7	0.0	0.7 *	0.0832
Associate's degree earned	39.5	21.8	17.7 ***	0.0000
Enrolled in four-year (during final semester)	20.6	11.2	9.4 ***	0.0001
Enrolled in two-year (during final semester)	8.9	5.8	3.0 *	0.0803
Not enrolled (during final semester)	10.0	4.7	5.2 ***	0.0027
Has not earned a degree	59.9	78.2	-18.3 ***	0.0000
Enrolled in four-year (during final semester)	4.0	6.1	-2.1	0.1599
Enrolled in two-year (during final semester)	17.3	24.3	-7.0 **	0.0100
Earned 48 college-level credits or more	8.7	12.6	-3.9 *	0.0583
Earned 36-47 college-level credits	3.3	5.4	-2.1	0.1259
Not enrolled (during final semester)	38.6	47.9	-9.3 ***	0.0049
Sample size (total = 896)	451	445		

SOURCE: MDRC calculations from CUNY Institutional Research Database (IRDB) data.

NOTES: 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 site and cohort.

Enrollment is based on courses in which students are still enrolled as of the end of the add/drop period.

Number of college-level credits includes credits earned before random assignment.

3.9 percentage point difference suggests that the control group might have the potential to catch up slightly in the next semester.[18] Although it is possible that over time the control group will significantly catch up to the program group's rate of degree attainment, it does not appear likely that this scenario will occur in the next one or two semesters.

[18]Notably, using data from the first through fifth semesters, it is possible to apply a similar approach to project graduation impact estimates in the second through sixth semesters, when the impact estimates are known. Results from such projections are only moderately successful, and the projections are the least accurate when projecting from the fifth to sixth semester.

ASAP has had a dramatic effect on the academic achievement of a variety of different low-income student populations. Compared with the usual college services at the three-year mark, students offered ASAP enrolled at higher rates, accumulated credits at higher rates, graduated at higher rates, and enrolled in four-year colleges at higher rates. This comprehensive program is clearly improving students' academic success. A reasonable next question is "at what cost?" The next chapter addresses that question.

Chapter 5

Cost-Effectiveness of ASAP

This chapter analyzes the cost and resources that the City University of New York (CUNY) and its partners invested in the ASAP program in relation to the estimated effect of the program. First, it identifies the cost of ASAP, including the costs of the components associated with its comprehensive services. Next, it compares the total cost of college for ASAP students with the total cost for students receiving the usual college services. Last, it compares the total cost of college and student academic outcomes for both groups in order to explore how the ASAP program changed the cost per outcome achieved — specifically, whether the investment in the program produced more graduates within three years per dollar than the usual college services.[1]

Summary of Findings

The key findings are the following:

- **The direct cost of the ASAP program is $14,029 per program group member over three years.** This estimate includes $6,238 on administration and staffing, $2,927 on student services, $1,558 on course enrollment, and $3,305 on financial supports.

- **When additional costs of educating students are considered, over the three years of follow-up, the college invested $16,284 more per ASAP group member than it did per control group member.** This estimate includes the direct cost to operate ASAP ($14,029) plus an estimate of the cost associated with ASAP students attempting more college courses during that time ($2,256). The program increased the investment in ASAP students by 63.2 percent above the $25,781 spent on the typical student receiving the usual college services. On an annual basis, the program increased the investment in the average program group member by roughly $5,428.

- **The cost-effectiveness analysis of ASAP highlights its ability to lower the cost per degree earned within three years.** The analysis shows that the

[1] It is possible to lower the cost per outcome achieved while increasing total costs. The analysis compares alternative strategies to achieve a designated goal and the result is always comparative, that is, one program lowers the cost per outcome achieved when compared with another. In this case, the program is compared with the usual college services. Each alternative requires resources to produce its respective result. The comparison aims to highlight which strategy or alternative produces the most positive outcomes per dollar of investment.

$16,284 of additional investment in each ASAP program group student resulted in an estimated 83.9 percent increase in the likelihood of earning a degree. Even though ASAP spent more money overall, this estimated effect actually lowered the cost per degree earned for ASAP students by 11.4 percent compared with students who receive the usual college services.

Methodology

This chapter describes the cost of the ASAP program and estimates the cost-effectiveness of two cohorts of ASAP students at three CUNY colleges (Borough of Manhattan, Kingsborough, and LaGuardia Community Colleges) from spring 2010 through summer 2013.[2] All dollar values in this analysis have been adjusted to 2013 dollars using the Higher Education Price Index for public two-year colleges. Costs are associated with the steady state operation of ASAP. All costs reflect the costs and resources of operating ASAP for the two cohorts at the three colleges in the study for the three-year evaluation period. All costs associated with MDRC's evaluation of ASAP have been excluded. Costs are considered from the perspective of the college. College-level spending includes resources from a spectrum of stakeholders, including students, private donors/foundations, local taxpayers, and state and federal governments. These costs are estimated using college financial information. Since all funds (such as tuition paid by students, subsidies from various governments, and private donations) are funneled through the college, this approach provides a good estimate of the total investment that was made in these community college students. For presentation purposes, all costs have been classified as direct costs, base costs, or indirect costs. See Box 5.1 for definitions of terms used in this chapter.

Direct Cost

The direct cost of the program accounts for the resources that are required to operate ASAP for the 451 program group students during the period of program evaluation at the three participating colleges. Table 5.1 illustrates the direct cost of ASAP, which was an estimated $14,029 per program group member over the three-year period. These values are based on CUNY's expenditure data on ASAP and adjusted using the Higher Education Price

[2]At two of the schools, two cohorts were randomly assigned, one in spring 2010 and one in fall 2010; at the third school, only one cohort was randomly assigned, in fall 2010.

Box 5.1

Key Cost Terms

The following terms are used in the cost analysis.

Direct cost: The cost directly associated with providing ASAP, including components such as administration and staffing, student services, course enrollment supports, and financial supports.

Base cost: The cost of the usual college services in the absence of the program. *Base cost = cost per credit* x *number of credits attempted by the control group*. The cost per credit is an estimate of the average amount of resources expended by the college to provide one credit of study; it is calculated by dividing the college's annual operating budget by the number of credits attempted at the college during the year of interest.

Indirect cost: The cost resulting from a behavioral change brought about by the program, such as additional credits attempted by program group members. This cost can extend beyond the period of program operation. The cost per credit for indirect cost is based on the college's annual operating budget excluding academic support and student services. *Indirect cost of the program = cost per credit (excluding academic support and student services)* x *additional credits attempted by program group members*.

Program group cost: The total cost of educating program group members over three years of follow-up. *Program group cost = direct cost + base cost + indirect cost*. Program group cost can be divided by the number of program group members to get the cost per program group member.

Control group cost: The total cost of educating control group members over three years of follow-up. *Control group cost = base cost*. Control group cost can be divided by the number of control group members to get the cost per control group member.

Net cost: The cost difference between program group members and control group members. *Net cost = program group cost – control group cost*.

Cost-effectiveness analysis: An evaluation in which the net costs of alternative interventions are expressed as the cost per unit of a desired outcome. In this analysis, cost-effectiveness is presented for cost per degree earned and cost per total credit earned.

Cost per degree earned: The amount invested in the research group of interest per degree earned by that research group. For the program group, *cost per degree earned = program group cost ÷ the percent of program group members who earned a degree*.

Cost per credit earned: The amount invested in the research group of interest per credit earned by that research group. For the program group, *cost per credit earned = program group cost ÷ number of total credits earned by the program group members*.

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Table 5.1

Direct Cost of ASAP per Sample Member

Three-Year Impacts Report

Program Component	Cost ($)	Percentage of Total (%)
Administration and staffing		
Administration	3,247	23.1
Research and evaluation	1,152	8.2
Other	1,840	13.1
Subtotal	6,238	44.5
Student services		
Advising	1,754	12.5
Career and employment services	569	4.1
Tutoring	604	4.3
Subtotal	2,927	20.9
Course enrollment		
Blocked or linked courses	1,363	9.7
ASAP seminar	195	1.4
Subtotal	1,558	11.1
Financial supports		
MetroCards	1,749	12.5
Textbooks	1,106	7.9
Tuition waiver	451	3.2
Subtotal	3,305	23.6
Total Direct Cost	14,029	100.0

SOURCE: MDRC calculations based on CUNY's ASAP expenditure data and the Higher Education Price Index.

NOTES: Tests of statistical significance were not performed.
Rounding may cause slight discrepancies in sums and differences.
Program costs are based on a steady state of operation that excludes external research and start-up costs.
All costs are shown in constant 2013 dollars.

Index.[3] Administration and staffing is the largest spending category; it includes $3,247 on program administration, $1,152 on research and evaluation, and $1,840 on other expenses.

[3]The direct costs by year are as follows: first year ($6,599), second year ($4,536), and third year ($2,895). The cost per program group member is greatest during the first year and decreases with time primarily because
(continued)

Student services accounted for $2,927 (20.9 percent); it includes $1,754 on advising, $569 on career and employment services, and $604 on tutoring. Course enrollment accounted for $1,558 (11.1 percent); it includes $1,363 for course blocks and $195 (1.4 percent) for the ASAP seminar. Financial supports accounted for $3,305 (23.6 percent); it includes $1,749 for MetroCards, $1,106 for textbooks, and $451 for tuition waivers. A detailed description of each spending category is listed below.

Administration and Staffing

- **Administration** covers the cost of administrative staff at the individual colleges and ASAP's central office who run and manage ASAP throughout the CUNY system. It includes the director of the program, program coordinator, clerical staff, and a small percentage of costs associated with fiscal services.
- **Research and evaluation** covers the cost of CUNY's internal and ongoing evaluation of the ASAP program. It pays for two full-time employees and information management systems associated with institutional capacity building, internal program evaluation, and program improvement. It does not include costs associated with the MDRC evaluation of ASAP.
- **Other** covers the cost of the student leadership program, office supplies, professional development, consultants, travel costs, marketing materials, computers, and an indirect institutional charge specific to the CUNY Research Foundation and Office of Academic Affairs.

Student Services

- **Advising** covers the cost of ASAP advisers. ASAP advisers had smaller caseloads per adviser (60 to 80 students compared with the norm of 600 to 1,500 students per adviser). These small caseloads allowed advisers to meet with ASAP students more frequently and for longer periods of time.
- **Tutoring** covers the cost of ASAP tutoring services. ASAP students in developmental courses or on academic probation are required to attend academic tutoring lessons separate from the normal college services.

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enrollments decline with time, so the first year covers the cost of most students. Even if the cost per full-time student remained constant over time, the cost per sample member would still decline because some sample members drop out over time. Additionally, the ASAP seminar only occurs within the first few semesters, after which ASAP students are not offered the service.

- **Career and employment services** covers the cost of ASAP-specific career and employment specialists who advise students on jobs, career planning, scholarships, and networking, and who host career fairs.

Course Enrollment

- **Blocked or linked courses** covers the cost of reserving seats for ASAP students in courses that are scheduled back to back or as a set in their first year.[4]
- **ASAP seminar** covers the cost of the required seminar course that ASAP students took within their first few semesters.

Financial Supports

- **Tuition waiver** covers the cost of waiving the difference between an ASAP student's tuition and fees and financial aid (the sum of the federal Pell Grant and New York State Tuition Assistance Program grant).
- **MetroCards** covers the cost of providing free unlimited monthly MetroCards to ASAP students who meet program requirements.
- **Textbooks** covers the cost of ASAP's buyback/rental policy with the college bookstore, which provides free use of textbooks to ASAP students.

Controlling Costs

ASAP has expanded since its inception in the CUNY system. As ASAP has grown, it has been able to control per-student costs by achieving economies of scale, leveraging relationships, and targeting ASAP services to high-need students. The program has achieved economies of scale by spreading fixed costs across a greater number of ASAP students. For example, the cost of administration per student generally decreases as programs expand. The program has leveraged relationships by negotiating discounted prices with the Metropolitan Transit Authority and Barnes and Noble bookstores to lower the cost of MetroCards and textbooks, respectively, for ASAP students. Specifically, ASAP paid on average $73 per monthly MetroCard over

[4]Blocked or linked courses, along with the costs associated with the tuition waiver, make up what is known as the "faculty replacement" fee within the CUNY system. This fee was designed as a lump sum paid out to the colleges by CUNY Central in exchange for the waiving of ASAP students' tuition (the portion that was not covered by financial aid), reserving spots or blocking entire courses for ASAP students, and occasionally opening extra summer or winter session courses for ASAP students. For the purposes of this analysis, the faculty replacement fee was split to show the amount associated with the tuition waiver and costs that went to the colleges to reserve and block courses for ASAP students.

the three-year follow-up period, while the cost to an individual student was $112 at the end of the follow-up period. ASAP also developed a textbook buyback policy, which provides students with the free use of textbooks at a much lower cost than if ASAP were to buy textbooks for each student. Finally, program participants are low-income students who generally receive financial aid that largely covers the cost of tuition. As a result, the cost of the tuition waiver for ASAP students has been one of the smallest program components (roughly 3 percent of ASAP's direct costs). If ASAP were expanded to include students who do not receive as much financial aid, then it is possible that the costs associated with the tuition waiver could increase, potentially increasing the cost of the program dramatically.

Base Cost

In order to understand the context of ASAP's direct cost, this analysis estimates the cost of the usual college services provided to non-ASAP students. This cost is referred to as the base cost. This analysis uses the estimated cost of credits attempted as a proxy for base costs. This approach assumes that the use of resources corresponds to the number of credits attempted. In other words, a student who attempts more credits is generally associated with greater expenditures than a student who attempts fewer credits.[5] Credits attempted serves as an appropriate driver of base costs because it provides a simple measure of the level of a student's engagement with the college. To estimate the dollar value of credits attempted, the number of credits attempted is multiplied by an estimated cost per credit. This cost per credit is estimated by dividing the college's annual total expenses and deductions by total instructional activity (credit and contact hours attempted) at the college during the year of interest as reported in the financial and enrollment data on the National Center for Education Statistics' Integrated Postsecondary Education Database System (IPEDS). (These values include the cost of depreciation and the cost of scholarships.)[6] The average cost per credit, in constant 2013 dollars, yielded by this calculation is then used to estimate the cost of the usual college experience.[7] This approach is not perfect. One limitation is the assumption that all credits attempted have the same cost to the

[5]It is possible, however, that students use services such as advising and counseling independent of the number of courses in which they enroll.

[6]Depreciation accounts for the cost of long-lived assets such as buildings, equipment, and vehicles. Although such assets are not consumed in one year, they are consumed with time. Including depreciation ensures that the cost of this consumption is accounted for. For more information on accounting standards in IPEDS, both for depreciation and scholarships, see the IPEDS factsheet, "IPEDS Finance Data FASB and GASB — What's the Difference?" (http://nces.ed.gov).

[7]Total expenses and deductions, as reported on IPEDS for public institutions in the new Governmental Accounting Standards Board (GASB 34/35) form, are divided by IPEDS's enrollment measure of total 12-month instructional activity (reported in credit or contact hours) by year to calculate the cost per credit attempted at a college. This cost per credit at the three CUNY schools in the study was calculated to be a weighted average of $470.53 in constant 2013 dollars.

college, which is not the case.[8] For example, science lab courses may be more expensive than English courses. In order to use this approach, the analysis assumes that the average cost of a CUNY student is representative of the average cost of a student in the sample.[9] These assumptions seem reasonable for this analysis because the process of random assignment helps ensure that any differences in the cost of credits attempted compared with the average cost likely occurs similarly in both the program and control groups. Estimating the base cost helps show how much money is spent to educate the typical student at CUNY in the absence of ASAP.

Table 5.2 presents all of the costs used in this cost analysis, and calculates a net cost per group member. The first row reiterates the direct cost that was discussed earlier. The second row of Table 5.2 presents the base cost of credits attempted at the colleges in the study. Control group members attempted an average of 54.8 credits in the three years of follow-up, for a total cost of credits attempted (credits attempted multiplied by cost per credit) of $25,781 per group member. This represents the cost of the typical college experience at the CUNY study schools in the absence of ASAP.

Indirect Cost

Indirect cost is estimated based on the number of additional credits attempted by ASAP students compared with control group students. This analysis uses two approaches: an upper bound based on average costs excluding the cost of academic and student services and a lower bound in which indirect costs equal zero. An average of these two approaches will be carried forward as the primary estimate of indirect costs.

Indirect cost equal to the average cost (excluding the cost of academic and student services) represents the case in which the college is unable to absorb the cost of additional credits attempted because existing resources are already fully leveraged and new resources are required. For example, if students are enrolling in additional courses that are filled to capacity, then the college may have to open new course sections, which would require an increase in resources. This cost per credit is different from the cost per credit used in the base cost estimate. The cost per credit for the base cost is estimated using the college's total expenditures and total instructional activity in credit hours. The cost per credit for indirect cost is estimated similarly, except that the cost of academic and student services is excluded from the colleges' expenses.[10]

[8]"Cost" in this case refers to the amount of resources dedicated to the course by the college; it is not necessarily connected to the price that students may be paying for that course.

[9]As discussed in Chapter 2 and shown in Table 2.1, the evaluation sample is relatively similar to the target population.

[10]The colleges' total instructional activity in credit hours is unchanged.

Evaluation of Accelerated Study in Associate Programs (ASAP) for Developmental Education Students

Table 5.2

Net Cost of Education per Sample Member

Three-Year Impacts Report

Feature ($)	Program Group	Control Group	Difference (Net)
Direct cost: cost of primary program components	14,029	0	14,029
Base cost: cost of credits attempted in the absence of the program	25,781	25,781	0
Indirect cost: cost of additional credits attempted due to the program	2,256	0	2,256
Upper bound: marginal cost equal to average cost[a]	4,511	0	4,511
Lower bound: marginal cost equal to zero[b]	0	0	0
Total cost	42,065	25,781	16,284
Upper bound: marginal cost equal to average cost[a]	44,320	25,781	18,540
Lower bound: marginal cost equal to zero[b]	39,809	25,781	14,029

SOURCE: MDRC calculations based on student level participation data, program-specific budget data, and financial and enrollment data from the Integrated Postsecondary Education Data System.

NOTES: Tests of statistical significance were not performed.
Rounding may cause slight discrepancies in sums and differences.
Program costs are based on a steady state of operation that excludes external research and start-up costs.
Credits attempted include all college-level and developmental credits attempted.
[a]"Marginal cost equal to average cost" represents the case in which existing college resources cannot be leveraged to accommodate changes in credits attempted, therefore incurring additional costs to the college. The additional cost to the college, or the marginal cost of the additional credits attempted, is approximated as the average cost per credit attempted at the institution, excluding the cost of academic support and student services which ASAP is already providing.
[b]"Marginal cost equal to zero" refers to the ability of existing college resources to absorb the cost of additional credits attempted by the program group without incurring new costs to the college.

The reason for this difference is to avoid double counting the costs associated with the academic and student services since the ASAP program already pays for additional student services.[11] The indirect cost estimate sets costs equal to the midpoint between the upper bound (when indirect

[11]The calculation of base cost for ASAP students did not make a similar exception since all students have access to the college's usual services and those in the program could have used these services in addition to the services provided by ASAP.

cost is equal to the average cost per credit excluding academic and student services) and the lower bound (when indirect cost is equal to zero).

The third section of Table 5.2 shows the indirect cost of the program associated with program group members attempting more credits than control group members. Program group members attempted more credits than their control group counterparts throughout the three years. On average, each program group member attempted 66.3 credits by the end of the follow-up period, approximately 11.5 credits more than the average control group member. Multiplying the additional 11.5 credits attempted by the corresponding average cost per credit (excluding academic and student services) gives an indirect cost of additional credits attempted by the program students of $4,511 per program group member.

The lower-bound estimate sets the indirect cost per credit equal to zero in order to capture a condition in which colleges are fully able to absorb the cost of additional credits attempted without additional cost. This estimate would be reasonable if most of the additional credits students attempted were large lecture classes in which some seats were open. In a university setting, it is possible that the marginal cost of additional attempted credits equals the average cost per credit or the marginal cost of additional attempted credits equals zero. Moreover, a university generally does not open new course sections until a certain threshold of interest is reached (otherwise students wait until the next semester to take a closed course). Therefore, the analyses use the estimate that sets the indirect cost equal to the midpoint (or average) between the conditions when the marginal cost of additional attempts is equal to average cost (excluding the cost of academic and student services) and when marginal cost is equal to zero. Accordingly, the indirect cost of additional credit attempts by program group members is $2,256. The conclusions of the cost-effectiveness analysis remain the same regardless of which indirect cost value is used.

Net Cost

Net cost is defined as the difference between the program group cost and the control group cost. The costs of each group are presented in the total line of Table 5.2. The total cost is calculated by adding the direct cost, base cost, and indirect cost. The total cost of ASAP per program group member over the course of the program was $42,065, compared with the $25,781 cost to educate the average control group member. Over three years, the net cost is $16,284 per program group member.[12]

[12]This cost analysis presents the average cost of ASAP per program group member. This estimate spreads costs across all students who started in the program group, including those who enrolled less than full time, dropped out, or graduated. Cost results are described using this approach (rather than using a cost per full-time

(continued)

Cost-Effectiveness Analysis

A cost-effectiveness analysis expresses the cost of alternative interventions as the cost per unit of a desired outcome.[13] This cost-effectiveness analysis considers the cost per degree earned and the cost per credit earned. These estimates spread costs across all students who started in the program group, including those who enrolled less than full time, dropped out, or graduated. Table 5.3 summarizes the results. The top row presents the cost per group member. (These values were described in the preceding "Net Cost" section.) The total cost per program group member ($42,065) is $16,284 more than the total cost per control group member ($25,781). The second row shows the percentage of program and control group members who earned a degree within three years. Specifically, it shows that 40.1 percent of program group members and 21.8 percent of control group members earned a degree after three years. Therefore, under normal conditions at the three CUNY community colleges, the cost per degree earned for the evaluation sample was $118,248. ASAP lowered the cost per degree earned to $104,825. Although ASAP costs an additional $16,284 per program group member, the program was cost-effective in terms of degrees produced. Specifically, the 18.3 percentage point increase in earning a degree was large enough to lower the cost per degree earned by $13,423 (11.4 percent). The findings of this analysis corroborate the findings of a 2012 study on ASAP's cost-effectiveness conducted by Levin and Garcia, which estimates that ASAP lowered the cost per degree by 14.7 percent.[14]

A cost-effective intervention reduces the cost per outcome compared with the status quo in such a way that its proportional effect on the desired outcome is greater than or equal to the proportional change in cost. In this case, ASAP increased the likelihood of earning a degree by 18.3 percentage points, from 21.8 to 40.1 percent. This change represents an 83.9 percent increase in the likelihood of earning a degree. This increase is proportionately more than the 63.2 percent increase in the cost associated with ASAP.[15]

A similar cost-effectiveness analysis was performed in relation to total credits earned. It showed that the cost per credit earned for the program group is higher than the cost per credit

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equivalent approach) in order to best align cost estimates with the outcomes and effects that are described in Chapter 4.

[13]For additional explanation of this approach, see Sommo, Mayer, Rudd, and Cullinan (2012). A similar approach is also used in Levin and Garcia (2012).

[14]Levin and Garcia (2012). The differences in the cost per graduate values in the Levin and Garcia analysis and this analysis are caused by multiple factors including: different graduation rates, different levels of enrollment, and different sources for full-time equivalent (FTE) cost estimates. That is, the MDRC estimate is based on data available in IPEDS (which includes the cost of depreciation and some types of scholarships), whereas the Levin and Garcia analysis uses a cost per FTE used by the CUNY budget office (which excludes the cost of depreciation and some types of scholarships).

[15]This finding means ASAP could spend an additional $5,387 per student and remain cost-effective in terms of lowering the cost per degree earned.

Evaluation of Accelerated Study in Associate Programs (ASAP) for Developmental Education Students

Table 5.3

Cost-Effectiveness Values

Three-Year Impacts Report

Outcome	Program Group	Control Group	Difference (Impact)	
Cost per group member ($)	42,065	25,781	16,284	
Earned a degree (%)	40.1	21.8	18.3	***
Cost per degree earned ($)	104,825	118,248	-13,423	
Total credits earned	47.7	39.0	8.7	***
Cost per credit earned ($)	882	661	221	
Sample size (total = 896)	451	445		

SOURCE: MDRC calculations from program-specific participation and budget data, transcript data, and financial and enrollment data from Integrated Postsecondary Education Data System (IPEDS).

NOTES: Rounding may cause slight discrepancies in sums and differences. All dollar values have been rounded to the nearest whole dollar.

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

Tests of statistical significance have only been performed on outcome measures not costs. All outcomes are cumulative over three years. For these measures, 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 cohort-campus interaction, National Center for Education Statistics risk factors, and pre-random assignment placement test scores.

earned for the control group. The last section of Table 5.3 shows the total credits earned per program and control group member: 47.7 and 39.0, respectively. However, the proportional change in credits earned, an increase of 22.3 percent (8.7 credits in addition to a base of 39.0), is less than the proportional change in cost (an increase of 63.2 percent). Specifically, as shown in the last rows of Table 5.3, the cost per credit earned for the program group is $882 compared with the control group cost per credit earned of $661, a difference of 33.4 percent. Therefore, ASAP was unable to lower the cost per total credits earned.[16]

[16]The fact that ASAP lowered the cost per outcome in terms of completing a degree within three years but not in terms of total credits earned reinforces the importance of the relationship between the percentage increase in cost and the percentage change for an outcome. For example, the percentage increase in costs associated with ASAP incurred over the normal college experience is 63.2 percent. Meanwhile, the 8.7 increase in total credits earned by program group students is a 22.2 percent change over control group students' (continued)

Cost-effectiveness analyses only highlight the relative efficiency of a program compared with the status quo without the program.[17] Having a program that is cost-effective compared with the status quo does not necessarily mean that its economic benefits exceed its cost nor does failing to have a program appear cost-effective compared with the status quo mean that its economic benefits fail to exceed its costs. While this analysis does not estimate the economic value of a two-year degree and hence does not estimate the economic value of completion, other research has. In particular, a 2013 benefit-cost analysis of ASAP conducted by Levin and Garcia indicates that the value of a two-year college degree easily exceeds the cost of producing degrees,[18] suggesting that producing more degrees results in economic gains. Specifically, for each dollar of investment in ASAP by taxpayers, the return was between $3 and $4, and around $12 for each dollar invested by the individuals, suggesting that ASAP is a very productive public and private investment.

Conclusion

This analysis shows that the program invested an additional $16,284 in the average program group member. This additional investment resulted in an 18.3 percentage point increase in degree completion within three years and an 8.7 increase in total credits earned over the control group. It is important to track these students for a longer time period for several reasons. First, the control group could catch up, as described in Chapter 4. Second, even if the program's estimated effect remains the same and the levels of both groups go up, the cost-per-outcome analysis could still switch directions. For example, if the control group eventually graduates at 50 percent and the program group at 68 percent, this could change the program's relative efficiency in terms of degrees earned.[19] However, even if the program impact fades over time because the control group catches up, the program benefits could still be greater than the costs since benefits accrue during the period for which an impact exists.

After three years, ASAP's impact on earning a degree is large enough that the cost per degree earned by program participants is actually lower than the cost per degree earned by students receiving the usual college services. Specifically, the cost per degree earned for the

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total credits earned. This 22.2 percent change is not enough to account for the 63.2 percent increase in cost, and therefore ASAP does not lower the cost per outcome with regard to total credits earned.

[17]Cost-effectiveness values are one way to evaluate the performance of ASAP relative to its cost. There are other frames that could produce different results. For example, a benefit-cost analysis of the program would estimate the value of increased earnings and other benefits to see if the benefits of the program exceed the cost of the program.

[18]Levin and Garcia (2013).

[19]Relative cost-efficiency could change because the percentage improvement on degree receipt would be substantially lower while the percentage increase on program cost would still be relatively large. Since this cost-effectiveness frame compares the proportionate changes, the results of the analysis could change.

program group is $13,423 (11.4 percent) less costly than the cost per degree earned by the control group. This difference is important because it shows that while more resources were invested in the program group, the impact of ASAP on earning a degree within three years was large enough to lower the cost per degree for ASAP students compared with students receiving the usual college services.

Chapter 6

Implications of the Findings and the Future of ASAP

This report shares some great news in a field in which good news can seem rare. MDRC's evaluation found that the ASAP program was well implemented at the three participating City University of New York (CUNY) community colleges, and its requirements were enforced during the period studied. The program provided an intensive array of supports over three years, and the difference was substantial between ASAP and the usual college services available to the study's control group. MDRC's study, like CUNY's internal study, found that ASAP was very successful in improving students' academic outcomes. Over three years, ASAP almost doubled graduation rates of low-income community college students in need of some developmental education. The dramatically higher graduation rates caused the cost per graduate to fall, despite the incremental costs of operating the program. Overall, ASAP's effects after three years are the most positive MDRC has found in over a decade of research in higher education.

This chapter offers some thoughts on which program components may be most important in driving the effects and explains some aspects of the evaluation's findings. The chapter ends with a brief description of what is next for the research and for ASAP.

Speculation on Why ASAP Worked and Lessons for Other Colleges

What drove the large effects found in the study and which of ASAP's components were most important in improving students' academic outcomes? MDRC's evaluation was not designed to definitively answer that question. Ultimately, each component in ASAP had the potential to affect students' experiences in college, and MDRC's evaluation estimates the effect of ASAP's full package of services on students' academic outcomes. It may be useful, however, to explore evidence that suggests whether any components were more or less important in changing students' outcomes — both to help interpret the effects of ASAP presented in this report and to inform college administrators considering a program similar to ASAP. This commentary is much more speculative than the findings presented earlier in the report.

It is likely that ASAP's full-time enrollment requirement, coupled with multiple supports to facilitate that enrollment, were central to the program's success. As discussed in prior chapters, ASAP required students to enroll in school full time, and the program increased the proportion of students who did so. It also increased the proportion of students who enrolled in winter and summer intersessions. This resulted in program group students' accumulating more

credits than control group students and moving through school more quickly. It is one thing to advise students to enroll full time and hope that they can find the resources to do so; it is an entirely different thing to advise them to attend full time while also covering their tuition, books, and transportation, and providing an array of enhanced student services to support them in school. Recall that 90 percent of program group students said that they had most or all of the services and supports that they needed to succeed in school, and 87 percent of program group members said that they had someone at college they could turn to for advice. It is unknown exactly how much support is necessary to yield substantial effects on full-time enrollment, but it seems unlikely that such a requirement paired with far more limited financial and student service supports would yield the same impact.

In addition to requiring students to enroll full time, ASAP requires students to participate in various program services. During the follow-up period, students were required to see their adviser twice a month, meet with the career and employment specialist once a semester, and attend tutoring frequently if they were taking a developmental course or were on academic probation. To help encourage students' engagement in key program services, ASAP linked this participation with receipt of a monthly MetroCard for use on public transportation. As noted earlier, a monthly MetroCard cost $112 at the end of the follow-up period for this report — a substantial cost for a low-income student. In a city where millions of people travel primarily or exclusively on public transportation, a MetroCard is a strong incentive and very likely increased students' participation in ASAP services.

To effectively link MetroCard receipt with participation, it was important to keep track of students' engagement in the program. As described in Chapter 3, colleges closely tracked students' participation in key ASAP components. This tracking allowed the program staff to closely monitor students' participation, adjust advisement as needed, and distribute MetroCards appropriately. Along with CUNY Office of Academic Affairs' (CUNY Central's) other evaluation efforts, it also permitted the college ASAP directors and the CUNY Central ASAP team to monitor program implementation and identify possible areas for improvement. This high level of monitoring and assessment, with a focus on improvement, likely contributed to ASAP's thorough implementation and its significant effects for students.

ASAP encouraged students to take their developmental courses early. Students in the program group moved through their developmental courses more quickly than control group members, and after three years many more program group members had completed their developmental education requirements.

While ASAP overall provides an uncommon degree of enhanced supports for students, it also has more requirements compared with the usual college services. This pairing of oppor-

tunity and obligation appears to be an important characteristic of the program. ASAP has high expectations of students in exchange for a comprehensive three-year package of services.

Listening to the voices of students who participated in ASAP may help in assessing the importance of the program's specific services and benefits. As mentioned earlier, CUNY Central's ASAP staff periodically surveyed participating students and convened focus groups. In both the surveys and focus groups, students pointed to the financial resources and advisement as the most helpful program components and the ones with which they were most satisfied.[1] A number of students supplied additional comments on the MDRC student survey, and many said that the program's financial supports and advisement were the most important elements of their success in school. Although it may be challenging for people to accurately identify what motivates complex behaviors, such as staying in school despite barriers or advancing to graduation when the majority of students do not, the students' assessments corroborate MDRC researchers' data-based observations. The students who responded to CUNY's surveys and focus groups also sometimes pointed to early registration as important to them.[2] It seems likely that the opportunity to register early, before seats filled up and courses closed, allowed more students to get the courses they needed and to create convenient schedules.

ASAP's financial supports were substantial and, based on the MDRC student survey, made a difference in students' experiences in college. The tuition waiver may have been on the whole less important than the free use of textbooks and free MetroCards for the MDRC evaluation sample, since only a small proportion of the program group students received a waiver. The waiver, however, may have been critical to many of the students who received it: It may have made the difference between attending school full time, part time, or not at all. Furthermore, the availability of a tuition waiver as part of ASAP's package of services may have affected even students who did not receive it. Some students may have been more willing to enroll in college (and enroll full time) because they knew the waiver was available and therefore would not need to worry about how they might pay for their tuition and fees.

Chapter 3 describes dramatic differences between the quantity and content of the advising available to program and control group students. As Chapter 4 fleshes out in more detail, ASAP's impact on three-year graduation rates is larger than its impact on earning 60 college-level credits or more, the number of credits typically needed to earn an associate's degree. This finding suggests that ASAP may have led students to take the right combination of credits to earn a degree or identify a major sooner, or it may have prompted students to take the final steps necessary, such as filing paperwork, to make the degree official. In either case, the ASAP adviser would have played a central role.

[1]Linderman and Kolenovic (2012).
[2]Linderman and Kolenovic (2012).

Students in CUNY's focus groups and surveys identified the blocked or linked courses as the least helpful of the ASAP components.[3] This finding also corroborates MDRC researchers' observations. As discussed earlier, that component of ASAP was implemented somewhat differently across the colleges, and most students in the program group did not take a complete block of courses. Most program group students took at least one course with a concentration of ASAP students (at least five students), but it seems unlikely that this component was central in driving the program's substantial effects.

It seems likely that specific students were helped by particular components at particular times. For example, a student who was struggling in his developmental math course may have been substantially helped by the ASAP tutor in that class. Tutoring may have made the difference — for that student, in that class — between failing and passing. Another student may have been connected to an internship by an ASAP career and employment specialist that helped her learn important on-the-job skills and solidify her career choice and commitment to getting a four-year degree. Any of the components may have made a big difference for at least some students.

That said, the effects presented in this report represent the impact of ASAP's full package of services. It is unknown what the effect of a modified program would be and it seems likely that a less intensive program would yield less substantial changes for students.

Overall, this exploration points to the following lessons for other colleges when designing and implementing programs and reforms:

- Requiring full-time enrollment in college while also providing an array of ongoing supports for students, such as enhanced advisement and financial supports, can yield substantial changes in enrollment and credit accumulation.
- Intersessions, perhaps especially summer, provide good opportunities to increase enrollment in college and credit accumulation.
- Requiring students to participate in key program components, monitoring participation, and providing a meaningful benefit to those who participate fully can markedly increase receipt of services.
- Monitoring program operations, with a focus on ongoing improvement, contributes to strong implementation.
- Encouraging or requiring students to take developmental courses early in their time in college can hasten and increase completion of those courses.

[3] Linderman and Kolenovic (2012).

Although the study did not isolate the effect of each of the practices described above, it provides ample evidence that they have great promise.

Implications of the Findings

The Promise of Comprehensive Reform

Graduation rates for community college students are very low, especially for students who need developmental courses to build their basic skills. Nationwide, only about 15 percent of students with developmental needs attending a two-year college earn a degree or certificate within three years.[4] College administrators and policymakers have been seeking interventions that can make a difference for students. Many programs have been found to help students academically in the short term, but few have made significant progress toward the ultimate goal of college completion.

To the authors' knowledge, ASAP's effects are unparalleled in large-scale experimental evaluations of programs in higher education to date, and policymakers and college administrators should consider implementing similar programs. In MDRC's experimental evaluations of community college reforms, the next largest increase in three-year graduation rates is 4 percentage points (compared with ASAP's impact of 18 percentage points).[5] The findings in this report show that a comprehensive, long-term intervention can substantially boost students' success. Many of ASAP's components have been tested before on their own. ASAP, however, brings them together in a holistic package. By providing an array of services and supports over three years, ASAP targets multiple potential barriers to students' success. These services and supports help a variety of students with different barriers as well as students with multiple barriers or different barriers over time.

ASAP may be uncommon in the breadth and intensity of its package of services. However, many higher education experts are calling for bold, large-scale reforms,[6] and existing reforms have been moving in this direction. For example, the Gates Foundation's Completion by Design initiative provides colleges with funding and technical assistance to reform the college experience from start to finish.[7] Another example is the Lumina Foundation for Educa-

[4]These data are based on a computation of beginning postsecondary students data from the U.S. Department of Education's National Center for Education Statistics (NCES) using the NCES QuickStats website (http://nces.edu.gov/datalab/quickstats). This statistic refers to the percentage of students who earned a certificate or degree anywhere through 2006, among students whose first institution level in 2003-2004 was a two-year college and who took any remedial courses in 2004.

[5]Patel, Richburg-Hayes, de la Campa, and Rudd (2013).

[6]Bailey (2014).

[7]www.completionbydesign.org.

tion's Finish Faster initiative, which aims to help higher education systems in select states develop and implement guided pathways to a degree with enhanced monitoring and support.[8] Although the effects for these initiatives have on students are not yet known, they reflect a shift away from short-term, narrowly focused reforms to a bolder, more comprehensive approach.

Even with ASAP's comprehensive services and unprecedented success in improving students' outcomes, a substantial proportion of program group students left college without a degree. By the end of the three-year follow-up period, 39 percent of the program group had not earned a degree and were not enrolled in college. Some of those students might return to school in later semesters or might have found a good job without a degree, but the finding highlights the ongoing challenge of fostering college completion for low-income students.

Considerations About ASAP's Costs

It may not be surprising that ASAP's effects are large, given the comprehensive nature of the program, that it provides services consistently for up to three years, and that it substantially increases the level of investment in each student. MDRC's evaluation estimated that CUNY spent about $16,300 more per program group member over three years than it spent per control group member. However, the study also found that, because ASAP boosted graduation rates so dramatically, the program actually cost less per graduate than did the usual colleges services — at least at the three-year point.

When considering ASAP's cost as presented in this report, it is important to bear in mind that many of the costs depended on the context in which the program was operated. For example, the cost of living in New York City is among the highest in the nation; staff salaries and fringe benefits in CUNY ASAP are likely higher than those at many other colleges. The costs also include administration and management at the colleges and several staff at CUNY Central. Most other colleges, however, are not overseen by a central administrative body, and operation costs might be lower. Most students in the program group did not need the tuition waiver. If the program had targeted students who were less likely to get complete coverage from their financial aid, the cost would have been higher. In short, an ASAP-like program in another setting is unlikely to be low cost, although its total cost would depend on various factors.

ASAP's success in increasing students' academic outcomes makes it a model for colleges in states where funding for higher education is linked to performance outcomes. Performance-based funding first started in Tennessee in 1979, and to date more than half of U.S. states have tried it. Using indicators such as student retention, attainment of certain credit levels,

[8]See project description on the Community College Research Center's website (http://ccrc.tc.columbia.edu).

and graduation rates, performance-based funding links funding for higher education institutions directly to students' performance.[9] If an ASAP-like model that was operated in another college could generate effects similar to those found at CUNY, the program would simultaneously improve students' outcomes and secure additional funds for the college. Of course, if many colleges in a state adopted ASAP and it was as successful as it was at CUNY, funding formulas might need to be revised or additional dollars might need to be secured.

Helping an Array of Students

MDRC's evaluation has shown that ASAP was highly effective for students who needed one or two developmental education courses: Students in the program group moved through their developmental courses more quickly, and after three years many more program group members than control group members had completed their developmental education requirements. ASAP's substantial effects on graduation were especially noteworthy because they were found for a group of students who did not have all the basic skills they needed for college-level courses when they entered the study. (CUNY's internal evaluation has found substantial effects for college-ready students as well.[10] It is unknown what ASAP's effects would be for students who needed more remediation than did the students in the evaluation sample.)

The higher education field has been struggling to develop initiatives that substantially help students with developmental education needs, and ASAP is a model to consider. ASAP provides enhanced student services, including tutoring and financial supports, but it does not change the curriculum or pedagogy in developmental education classrooms. There is still work to be done to improve what happens inside the community college classroom — and many reforms are being tried — but the results from this study show that outcomes for students with developmental education needs can be markedly improved, and students can even graduate relatively quickly, with the right package of supports, requirements, and messages.

It is notable that ASAP generated positive effects for all subgroups of students examined, including those defined by gender, high school diploma status, and number of developmental courses needed at the start of the study. As described earlier, the majority of students in the evaluation sample were relatively young when they entered the study, lived at home with their parents, were unmarried, and did not have children. At the same time, however, the sample included a substantial number of students considered to be nontraditional college students: 23 percent of the evaluation sample were 23 or older when they entered the study, 26 percent did not live with their parents, 31 percent were employed, 15 percent had at least one child, and at

[9]Doherty and Reddy (2013).
[10]Linderman and Kolenovic (2012).

least 6 percent were married.[11] ASAP was designed to help a broad array of students, and this report presents evidence that it was successful.

ASAP requires students to enroll in college full time. Some higher education experts argue that many community college students simply cannot attend full time because of family obligations, work, or other issues. Nationwide, about 40 percent of community college students (roughly 2.8 million students) attend school full time.[12] This study shows that ASAP did boost full-time enrollment, compared with regular college services. In other words, some students who would have attended college part time without ASAP attended full time because of the program. It is unclear, however, what the effects might be with a different target group, such as low-income parents. It is also unclear what outcomes an ASAP-type program that did not require full-time enrollment would yield.

What's Next?

ASAP's effects at the three-year point are unprecedented. This section briefly describes the expansion of ASAP within CUNY. It also presents a further possible study using the MDRC evaluation sample and efforts to replicate the program at other colleges.

Expansion of ASAP Within CUNY

Based on results from its internal study of ASAP and the positive effects from the random assignment evaluation, CUNY committed to expand the program substantially. The current goal is to serve over 13,000 students by fall 2016 across the original six community colleges and additional CUNY colleges. Medgar Evers College in Brooklyn, a college in the CUNY system offering both associate's and bachelor's degrees, launched ASAP in fall 2014.

In the expansion, most ASAP features have remained the same. In order to lower the program's costs, however, there are a few changes, including fewer semesters of the ASAP seminar and somewhat larger caseloads for advisers. Each ASAP adviser is now responsible for no more than 150 students — more than during the evaluation period but still far fewer students than with whom non-ASAP advisers work. During the first semester, all students meet with their adviser twice a month. Each subsequent semester, students are placed into one of three needs groups based on academic, personal resiliency, and program compliance criteria. The groups receive differentiated types of contact (individual, group, telephone, and e-mail) with a

[11]Fifteen percent of the evaluation sample did not indicate their marital status on the Baseline Information Form.

[12]American Association of Community Colleges' Community College Enrollment website (http://www.aacc.nche.edu/AboutCC/Trends/Pages/enrollment.aspx).

sustained focus on maintaining strong relationships with advisers. Tracking data from CUNY shows that the vast majority of students continued to have contact with their adviser at least once a month.

Longer-Term Evaluation of CUNY ASAP

ASAP's effects for the sample of students in this random assignment evaluation are very notable at the three-year point. It is also important to know what happens to these students in the longer term, and MDRC hopes to raise funds to continue studying students' outcomes. ASAP was designed both to increase the proportion of students who receive a degree and to help them graduate more quickly. At the three-year point, ASAP may have caused students to graduate who would not have without the program, accelerated graduation for students who would have done so eventually, or both. Therefore, open questions about academic outcomes include the following: Do program group students continue to earn associate's degrees at high rates? Do control group members begin to catch up in terms of earned associate's degrees? What are the longer-term effects of ASAP on bachelor's degrees? It is also important to know what happens to students in the labor market. A college degree is important in part because of its potential to benefit its recipients in the form of better job opportunities. Finally, the program was found to be cost-effective in terms of producing graduates at the three-year point. When considering ASAP's costs relative to its effects for students, it is important to consider a longer time frame. If a program's effect on graduation rates changes, its cost-effectiveness may also change.

Replicating and Evaluating ASAP Outside of CUNY

ASAP is a highly promising program that merits testing in other settings. It is important to know whether the comprehensive ASAP program can be successfully implemented by other colleges, in different contexts with different students, and yield substantial effects. Studying replications of ASAP at different colleges would help answer that question and provide information on how the program can be adapted for settings outside of CUNY and New York City. It would also help show whether ASAP is a cost-effective investment for other colleges.

ASAP, with its unprecedented effects for students, has received much attention in the higher education field, and many colleges have begun exploring whether they might adopt it or a similar model. MDRC is working with CUNY to develop evaluations of ASAP and ASAP-like programs at interested colleges to learn more about what might be driving the effects and whether the program can successfully operate at a lower cost. If the results indicate that ASAP's effects are consistently positive across institutions outside of CUNY, they may offer decisive evidence that the model may be effective at most other colleges. If the program's effects vary by

college, the results will shed light on the kinds of colleges and students that ASAP would benefit most.

Overall, MDRC's evaluation found that CUNY developed and successfully implemented a program that generated large, meaningful changes for low-income students with developmental education needs at three urban community colleges. With an investment in the right combination of enhanced services, requirements, and messages, community college students can succeed at far higher rates than usual. The ASAP model offers a promising strategy to markedly increase graduation rates and build human capital among disadvantaged populations.

Appendix A

Additional Baseline Information

Evaluation of Accelerated Study in Associate Programs (ASAP) for Developmental Education Students

Appendix Table A.1

Selected Characteristics of Sample Members at Baseline

Three-Year Impacts Report

Outcome	Full Sample
Marital status (%)	
Married	6.1
Unmarried	78.6
Missing	15.3
Lives with parents (%)	73.7
Parents pay more than half of expenses (%)	41.0
Missing	18.0
Has one or more children (%)	15.3
Currently employed (%)	31.3
Among those currently employed, number of hours worked per week in current job (%)	
1-10 hours	*8.1*
11-20 hours	*34.0*
21-30 hours	*31.7*
31-40 hours	*24.7*
More than 40 hours	*1.5*
Highest grade completed (%)	
10th grade or lower	7.3
11th grade	7.8
12th grade[a]	75.9
Missing	9.0
Diplomas/degrees earned[b] (%)	
High school diploma	73.8
General Educational Development (GED) certificate	20.8
Occupational/technical certificate	5.6
Other	1.7
None	6.0

(continued)

Appendix Table A.1 (continued)

Outcome	Full Sample
Date of high school graduation/GED receipt (%)	
During the past year	49.4
Between one and two years ago	13.3
Between two and five years ago	13.1
More than five years ago	13.2
Has not earned a diploma/GED[a]	6.0
Missing	5.0
Highest degree student plans to attain (%)	
Associate's	2.8
Bachelor's	31.4
Master's	41.6
Professional or doctorate	17.8
Beyond an associate's, unspecified	6.4
First person in family to attend college (%)	30.3
Highest degree/diploma earned by mother (%)	
Not a high school graduate	19.5
High school diploma or GED	21.8
Some college, did not complete a degree	16.0
College degree[c]	18.6
Missing	24.1
Language other than English spoken regularly in home (%)	44.7
Sample size	896

SOURCE: MDRC calculations using Baseline Information Form (BIF) data.

NOTES: Estimates are adjusted by site and research cohort.

Missing values are only included in variable distributions for characteristics with more than 5 percent of the sample missing.

Distributions may not add to 100 percent because of rounding.

Characteristics shown in italic type are calculated for a proportion of the full sample.

[a]This number includes students who were enrolled in high school at study intake.

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

[c]A college degree includes associate's, bachelor's, master's, and doctorate degrees.

Evaluation of Accelerated Study in Associate Programs (ASAP) for Developmental Education Students

Appendix Table A.2

Developmental Courses Needed at Baseline

Three-Year Impacts Report

Outcome (%)	Full Sample
Number of developmental courses needed	
None	2.1
1	39.4
2	50.6
3 or more	7.9
Subject of developmental need	
English	16.8
Math	53.3
English and math	27.7
Sample size	797

SOURCE: MDRC calculations from CUNY Institutional Research Database (IRDB) data.

NOTES: Students without pre-random assignment CUNY Assessment Test data in all subject areas are excluded from this table.

Rounding may cause slight discrepancies in sums and differences.

Estimates are adjusted by site and cohort.

Appendix B

MDRC Student Survey Documentation and Analyses

This appendix addresses two aspects of the MDRC student survey:

1. **Survey response bias analysis:** An analysis of the response rate and the potential for bias in the survey results.

2. **Creation of survey scales:** A description of two scales created from the student survey and reported in Chapter 3 (the Quality of Advising scale and the Integration and Sense of Belonging scale).

1. Survey Response Bias Analysis

This section of the appendix analyses the response rate for the MDRC student survey, and the potential for bias in the results.

Survey Fielding and Respondent Sample

The MDRC student survey asked study participants about a variety of topics including their participation in and experience with student services, educational experiences, work experience, and financial situation. The survey was fielded to all 896 evaluation sample members approximately one year after random assignment. Students in the spring 2010 cohort were surveyed February through May 2011. Students in the fall 2010 cohort were surveyed September through December 2011. A total of 742 responses were collected, equivalent to an overall survey response rate of 83 percent.[1] Program group students responded at a rate of 85.1 percent and control group students at a rate of 80.8 percent.

Characteristics of Survey Respondents

Three analyses were conducted to test for potential biases. First, characteristics of survey respondents are compared with the characteristics of students who did not respond to the survey. These results provide an indication of how representative the survey respondents are of the full study sample — a form of external validity. Second, three-year academic impacts of survey respondents are compared with those of nonrespondents. These results also serve as an indication of external validity. Finally, characteristics for program group students who responded to the survey are compared with characteristics for control group students who responded to

[1]Two students out of the study sample of 896 were excluded from the calculation of response rate. At the time of the survey fielding, these students were either away or unavailable to respond for the duration of the survey (1 student) or could not be contacted due to a language barrier (1 student). Excluding these 2 students, a total of 894 students remained. A total of 742 responses represent 83 percent of this group.

the survey — these results provide an indication of whether the results are internally valid for survey respondents.

Comparison of Respondent and Nonrespondent Baseline Characteristics

Appendix Table B.1 compares baseline characteristics for survey respondents and nonrespondents. The table indicates that respondents and nonrespondents were similar with regard to all baseline characteristics measured. However, all survey bias analyses are limited to a small number of baseline characteristics.[2] Thus, respondents and nonrespondents may differ on unmeasured baseline characteristics.

An omnibus F-test was conducted to see whether students' baseline characteristics were jointly predictive of responding to the survey.[3] The F-test yielded a p-value of .20, suggesting that respondents and nonrespondents do not differ significantly in their measured baseline characteristics. This finding provides evidence that the survey results may generalize to nonrespondents.

Comparison of Respondent and Nonrespondent Academic Impacts

Appendix Table B.2 compares the estimated impact of ASAP on key academic outcomes, for survey respondents and nonrespondents. For all three academic outcomes examined, the table shows that the estimated impact of ASAP is much larger for survey respondents than for nonrespondents. Among survey respondents, 24.2 percent of control group members earned a degree within three years, compared with 44.1 percent of program group members, for an estimated impact of 19.8 percentage points. Among nonrespondents, ASAP's estimated impact on earning a degree is only 5.4 percentage points. The final column indicates that this difference in estimated impacts is statistically significant. Similar patterns are observed for enrollment and credit accumulation measures: ASAP's estimated impact is much larger among survey respondents than among nonrespondents. Appendix Table B.2 suggests that survey respondents and nonrespondents reacted differently to ASAP. Thus, the survey results among respondents may not generalize to those who did not respond to the survey.[4]

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[2]For both analyses, data confidentiality concerns limited the number of baseline characteristics available for these comparisons.

[3]Logistic regression was used for this analysis in cases where the outcome was whether a sample member responded to the survey and the predictor variables were students' baseline characteristics.

[4]As stated in Chapter 3, the survey is the main data source used to measure treatment contrast. If the service contrast is suspected to be related to academic impacts, then the analysis presented in Appendix Table B.2 probably suggests that the survey results may be slightly larger than what they would have been had all study sample members responded to the survey.

Evaluation of Accelerated Study in Associate Programs (ASAP) for Developmental Education Students

Appendix Table B.1

Characteristics of ASAP Survey Respondents and Nonrespondents

Three-Year Impacts Report

Characteristic (%)	Number of Observations	Full Sample	Survey Respondents	Survey Nonrespondents	P-Value
Female	894	62.1	63.2	56.7	0.1426
Earned a high school diploma or higher at baseline[a] (%)	894	74.6	75.5	70.2	0.1823
Number of developmental courses needed at baseline					0.2459
0	795	2.1	2.3	1.5	
1	795	39.2	40.6	32.6	
2	795	50.7	49.7	55.6	
3 or more	795	7.9	7.4	10.4	
Subject of developmental need					0.6058
English	778	17.1	17.5	15.0	
Math	778	54.5	54.7	53.4	
English and math	778	28.4	27.8	31.6	
Sample size		894	742	152	

SOURCE: MDRC calculations using Baseline Information Form (BIF) data and CUNY Institutional Research Database (IRDB) test data.

NOTES: A two-tailed t-test was applied to differences between survey response groups for gender and dipomas/degrees earned. A chi-squared test was applied to differences between the groups for developmental courses and subjects needed. Levels for statistically significant differences between program and control groups are indicated as: * = 10 percent; ** = 5 percent; and *** = 1 percent.

To analyze whether on average survey respondents and nonrespondents differed from each other, an omnibus F-test was performed, which yielded a p-value of 0.1971. This finding suggests that on the baseline charateristics shown above, survey respondents and nonrespondents do not differ from one another.

Estimates are adjusted by site and cohort.

Missing values are not included in individual variable distributions.

Distributions may not add to 100 percent because of rounding.

[a]This number includes high school diplomas, occupational and technical certificates, and unspecified other types of degrees. Not included are students who earned no degree, earned a GED and no other degrees, or who are missing degree information.

Evaluation of Accelerated Study in Associate Programs (ASAP) for Developmental Education Students

Appendix Table B.2

Three-Year Academic Outcomes of ASAP Survey Respondents and Nonrespondents

Three-Year Impacts Report

Outcome	Sample Size	Program Group	Control Group	Difference	P-Value for Difference	P-Value for Differential Estimated Effects	
Sessions enrolled						0.0404	††
Respondents	742	6.9	5.7	1.3 ***	0.0000		
Nonrespondents	152	4.5	4.3	0.2	0.7381		
Total credits earned						0.0483	††
Respondents	742	50.8	41.2	9.6 ***	0.0000		
Nonrespondents	152	29.3	29.9	-0.5	0.9076		
Earned a degree from any college						0.0331	††
Respondents	742	44.1	24.2	19.8 ***	0.0000		
Nonrespondents	152	17.5	12.1	5.4	0.3589		
Sample size	894						

SOURCE: MDRC calculations from CUNY Institutional Research Database (IRDB) and National Student Clearinghouse data.

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

A two-tailed t-test was applied to differences of impacts between survey respondents and nonrespondents. Statistical significance levels are indicated as: ††† = 1 percent; †† = 5 percent; † = 10 percent.

Rounding may cause slight discrepancies in sums and differences.

Estimates are adjusted by site and cohort.

While ASAP appears to be more effective for students who responded to the survey, ASAP's estimated effects for survey respondents are very similar to the estimated effects among the full study sample. For example, among the full study sample, the estimated impact on degree receipt is 18.3 percentage points — similar in magnitude and statistical significance to the 19.8 percentage point estimated impact among survey respondents. This similarity is in large part because of the high response rate to the survey; most students in the full sample responded to the survey. It is therefore logical that estimated impacts among the full sample

and among survey respondents would also be similar. Thus, while the survey results appear unlikely to generalize to nonrespondents, they are probably close to representative of the full study sample.

The results in Appendix Table B.1 and B.2 — combined with the high response rate for the survey — provide evidence that, with some caution, impact estimates calculated from survey responses can be generalized to all study participants.

Comparison of Program and Control Group Respondent Baseline Characteristics

A slightly higher proportion of program group students responded to the survey (85 percent) as compared with control group students (81 percent). Appendix Table B.3 compares baseline characteristics for respondents in the program and control groups to determine whether respondents' characteristics differed between the two research groups. The table shows that the two groups were comparable, with survey respondents in the program and control groups similar on all measured baseline characteristics.

An omnibus F-test was conducted to examine whether survey respondents' baseline characteristics were jointly predictive of student's experimental status. The results were not statistically significant, indicating little evidence that the groups of respondents were systematically different at the outset of the study. This test confirms that among the survey respondents, it is reasonable to compare the program and control groups and expect an internally valid causal estimate of the effect of ASAP on survey respondents.

Conclusion

The response rate for the MDRC student survey was 83 percent. The baseline characteristics of program and control group students who responded to the survey were not jointly significantly different. The characteristics of survey respondents and nonrespondents were also not jointly significantly different. While the estimated impact of ASAP was found to be different among those who responded to the survey and those who did not, the estimated impact among survey respondents is similar to the estimated impact among the full sample. Thus, the survey results are likely representative of the full sample, but may not be representative of the experiences of the 17 percent of the sample who did not respond.

Evaluation of Accelerated Study in Associate Programs (ASAP) for Developmental Education Students

Appendix Table B.3

Characteristics of Program and Control Group Survey Respondents

Three-Year Impacts Report

Characteristic (%)	Number of Observations	All Survey Respondents	Program Group	Control Group	P-value
Female	742	63.2	65.6	60.7	0.1674
Earned a high school diploma or higher at baseline[a]	742	75.6	74.4	76.8	0.4464
Number of developmental courses needed at baseline					0.3798
0	660	2.3	1.5	3.1	
1	660	40.6	42.7	38.4	
2	660	49.7	48.8	50.6	
3 or more	660	7.4	7.0	7.9	
Subject of developmental need					0.7348
English	645	17.5	16.6	18.5	
Math	645	54.7	56.1	53.2	
English and math	645	27.8	27.3	28.2	
Response rate	894	83.0	85.2	80.8 *	0.0800
Sample size		742	384	358	

SOURCE: MDRC calculations using Baseline Information Form (BIF) data and CUNY Institutional Research Database (IRDB) test data.

NOTES: A two-tailed t-test was applied to differences between control group survey respondents and program group survey respondents for gender and dipomas/degrees earned. A chi-squared test was applied to differences between the groups for developmental courses and subjects needed. Levels for statistically significant differences between program and control groups are indicated as: * = 10 percent; ** = 5 percent; and *** = 1 percent.

To analyze whether on average program and control group survey respondents differed from each other, an omnibus F-test was performed, which yielded a p-value of 0.8117. This finding suggests that on the baseline characteristics shown above, program and control group survey respondents do not differ from one another.

Estimates are adjusted by site and cohort.

Missing values are not included in individual variable distributions.

Distributions may not add to 100 percent because of rounding.

[a]This number includes high school diplomas, occupational and technical certificates, and unspecified other types of degrees. Not included are students who earned no degree, earned a GED and no other degrees, or who are missing degree information.

2. Creation of Survey Scales

This section of the appendix describes two scales reported in Chapter 3 from the MDRC student survey. This section provides details on the Quality of Advising scale and the Integration and Sense of Belonging scale, including questions that composed the scales and data processing conducted to calculate the values presented in Chapter 3.

Quality of Advising

The quality of advising measures presented in Table 3.3 are derived from five questions administered in the MDRC student survey. These questions were adapted from the Academic Advising Inventory (AAI). Students were asked to indicate if they strongly agree (1); agree (2); disagree (3); or strongly disagree (4) with the following:

1. You are satisfied in general with the academic advising you have received.
2. You have received accurate information about courses, programs, and requirements through academic advising.
3. Academic advisers kept you informed about deadlines related to institutional policies and procedures, such as drop/add periods, withdrawal deadlines, registration periods, etc.
4. Academic advising has been available when you needed it.
5. Sufficient time has been available when you met with academic advisers.

Originally, for all questions, a higher value response indicates lesser quality advising. All five questions were recoded to change the direction of responses.[5] After the direction was recoded, a higher value response indicated higher quality advising.

A scale was created as the unweighted average of a student's responses to all five questions. Respondents had the option to skip or refuse any question in the scale; a small number of students responded to some but not all of the five questions in the scale. If the student answered only one or two questions in the scale, the scale was not calculated. For students who answered three or four questions in the scale, the scale was calculated as the average of that student's responses to the questions that were answered.

The table presents the percent of students rating the advising they received as high or low quality. The low category included students whose calculated score is one or more standard

[5]For all five questions: 1 became 4; 2 became 3; 3 became 2; 4 became 1.

deviations below the mean, indicating a relatively lower rating. The high category included students whose calculated score is one or more standard deviations above the mean, indicating a relatively higher rating.

Finally, a factor analysis tested how well the items included in the scale measure a common underlying construct. The factor analysis yielded a standardized Cronbach's alpha of 0.895.

Integration and Sense of Belonging at School

The sense of belonging measures presented in Table 3.9 are derived from nine questions asked in the MDRC student survey. These questions were first devised for use in MDRC's evaluation of a learning communities program at Kingsborough Community College.[6] Students were asked to indicate if they strongly agree (1); agree (2); disagree (3); or strongly disagree (4) with the following:

1. College is an unfriendly place.
2. I do not feel that I fit in or belong in college.
3. The instructors and staff understand who I am and where I am coming from.
4. It is difficult to make good friends with other students.
5. The other students do not understand who I am and where I am coming from.
6. College has the feeling of a community, where many people share the same goals and interests.
7. Many people at college know me by name.
8. I do not feel I am part of college life.
9. I feel that I matter to the college instructors, staff, and other students.

Originally, for some questions, a higher value response indicated a greater sense of belonging, and for some questions, a higher value response indicated a lesser sense of belonging. Those latter questions were recoded to change the direction of responses.[7] After the direction was recoded for those questions, a higher value response indicated a greater sense of belonging for all questions.

[6]Scrivener et al. (2008).

[7]For questions 3, 6, 7, and 9: 1 became 4; 2 became 3; 3 became 2; 4 became 1.

A scale is created as the unweighted average of a student's responses to all nine questions. Respondents had the option to skip or refuse any question in the scale; a small number of students responded to some but not all of the nine questions in the scale. If the student answered five or fewer questions in the scale, the scale was not calculated. For students who answered six or more questions in the scale, the scale was calculated as the average of that student's responses to the questions that were answered.

The table presents the percent of students reporting a high or low sense of belonging. The low category included students whose calculated score is one or more standard deviations below the mean, indicating a lesser integration and sense of belonging. The high category included students whose calculated score is one or more standard deviations above the mean, indicating a greater integration and sense of belonging.

Finally, a factor analysis tested how well the items included in the scale measure a common underlying construct. The factor analysis yielded a standardized Cronbach's alpha of 0.846.

Appendix C

Additional Impact Tables

Evaluation of Accelerated Study in Associate Programs (ASAP) for Developmental Education Students

Appendix Table C.1

Enrollment at CUNY, Nationally, Full Time, and ASAP Participation

Three-Year Impacts Report

	Program Group		Control Group		Estimated Effects		
Outcome (%)	Mean	Standard Deviation	Mean	Standard Deviation	Mean Difference	Standard Error	P-Value
Enrolled at any CUNY college							
Semester 1	96.4	18.5	94.0	23.9	2.5	1.4	0.0816
Main session	96.4	18.5	93.7	24.3	2.7	1.4	0.0601
Intersession	58.4	49.4	37.4	48.5	21.0	2.8	0.0000
Semester 2	91.1	28.5	80.9	39.4	10.3	2.3	0.0000
Main session	90.3	29.7	80.7	39.5	9.6	2.3	0.0000
Intersession	54.0	49.9	28.8	45.4	25.2	2.9	0.0000
Semester 3	76.2	42.6	68.8	46.4	7.4	3.0	0.0127
Main session	75.8	42.9	68.1	46.7	7.7	3.0	0.0106
Intersession	45.0	49.8	28.1	45.0	16.9	2.9	0.0000
Semester 4	69.0	46.3	59.5	49.1	9.5	3.2	0.0031
Main session	67.7	46.8	58.2	49.4	9.5	3.2	0.0033
Intersession	32.9	47.0	23.0	42.2	9.9	2.8	0.0005
Semester 5	57.4	49.5	50.3	50.1	7.1	3.3	0.0336
Main session	56.5	49.6	49.9	50.1	6.6	3.3	0.0469
Intersession	20.0	40.0	19.1	39.4	0.9	2.6	0.7379
Semester 6	45.9	49.9	41.1	49.3	4.8	3.3	0.1469
Main session	45.0	49.8	40.4	49.1	4.6	3.3	0.1658
Intersession	14.5	35.2	10.9	31.3	3.5	2.2	0.1079
Enrolled at any college							
Semester 1	96.7	18.0	94.2	23.5	2.5	1.4	0.0755
Semester 2	91.8	27.5	81.6	38.8	10.3	2.2	0.0000
Semester 3	77.3	41.9	70.2	45.8	7.2	2.9	0.0144
Semester 4	71.2	45.3	62.9	48.4	8.3	3.1	0.0080
Semester 5	61.9	48.6	55.3	49.8	6.6	3.3	0.0455
Semester 6	51.2	50.0	47.4	50.0	3.9	3.3	0.2491
Enrolled full time at any CUNY college							
Semester 1	95.8	20.1	85.2	35.6	10.6	1.9	0.0000
Semester 2	85.6	35.2	65.2	47.7	20.4	2.8	0.0000
Semester 3	73.8	44.0	59.6	49.1	14.2	3.1	0.0000
Semester 4	63.0	48.3	47.9	50.0	15.1	3.3	0.0000
Semester 5	45.7	49.9	39.6	49.0	6.1	3.3	0.0641
Semester 6	32.8	47.0	27.4	44.7	5.4	3.0	0.0773
Sample size (total = 896)	451		445				

(continued)

Appendix Table C.1 (continued)

SOURCE: MDRC calculations from CUNY Institutional Research Database (IRDB) and National Student Clearinghouse data.

NOTES: A two-tailed t-test was applied to differences between research groups.
Estimates are adjusted by site and cohort.
Enrollment is based on courses in which students are still enrolled as of the end of the add/drop period.
Full-time enrollment is defined as enrollment in 12 or more credits.

Evaluation of Accelerated Study in Associate Programs (ASAP) for Developmental Education Students

Appendix Table C.2

Credits Attempted: Three Years

Three-Year Impacts Report

Outcome	Program Group Mean	Program Group Standard Deviation	Control Group Mean	Control Group Standard Deviation	Estimated Effects Mean Difference	Estimated Effects Standard Error	Estimated Effects P-Value
Total credits attempted							
Semester 1	16.10	4.71	13.92	5.04	2.18	0.32	0.0000
Main session	12.98	3.10	12.09	3.87	0.89	0.23	0.0001
Intersession	3.12	3.08	1.83	2.69	1.29	0.17	0.0000
Semester 2	14.50	5.84	11.23	6.50	3.28	0.41	0.0000
Main session	11.79	4.37	9.86	5.48	1.93	0.33	0.0000
Intersession	2.71	2.79	1.37	2.40	1.34	0.16	0.0000
Semester 3	12.29	7.45	9.73	7.37	2.56	0.49	0.0000
Main session	10.08	5.98	8.39	6.23	1.69	0.40	0.0000
Intersession	2.20	2.68	1.34	2.36	0.86	0.15	0.0000
Semester 4	10.17	7.61	8.30	7.58	1.86	0.51	0.0002
Main session	8.64	6.36	7.25	6.55	1.39	0.43	0.0012
Intersession	1.53	2.41	1.06	2.15	0.47	0.14	0.0010
Semester 5	7.48	7.09	6.71	7.24	0.78	0.48	0.1048
Main session	6.66	6.33	5.89	6.33	0.77	0.42	0.0669
Intersession	0.82	1.82	0.81	1.86	0.01	0.12	0.9556
Semester 6	5.73	6.97	4.90	6.49	0.82	0.45	0.0672
Main session	5.02	6.07	4.38	5.82	0.63	0.40	0.1102
Intersession	0.71	1.92	0.52	1.61	0.19	0.12	0.0984
Developmental credits attempted							
Semester 1	5.60	3.83	3.62	3.36	1.98	0.24	0.0000
Main session	4.00	3.14	3.16	3.12	0.84	0.20	0.0000
Intersession	1.60	2.41	0.45	1.44	1.14	0.13	0.0000
Semester 2	2.62	3.29	1.71	2.58	0.90	0.20	0.0000
Main session	1.82	2.63	1.55	2.45	0.27	0.17	0.1064
Intersession	0.80	1.67	0.16	0.87	0.64	0.09	0.0000
Semester 3	1.30	2.55	0.95	2.01	0.35	0.15	0.0227
Main session	0.98	2.10	0.79	1.77	0.19	0.13	0.1381
Intersession	0.32	1.12	0.17	0.92	0.16	0.07	0.0209
Semester 4	0.60	1.74	0.87	1.99	-0.27	0.12	0.0316
Main session	0.48	1.47	0.69	1.68	-0.21	0.11	0.0510
Intersession	0.12	0.69	0.18	0.88	-0.06	0.05	0.2363
Semester 5	0.29	1.24	0.63	1.76	-0.34	0.10	0.0008
Main session	0.25	1.05	0.58	1.65	-0.33	0.09	0.0004
Intersession	0.04	0.42	0.05	0.43	-0.01	0.03	0.7269

(continued)

Appendix Table C.2 (continued)

Outcome	Program Group Mean	Program Group Standard Deviation	Control Group Mean	Control Group Standard Deviation	Estimated Effects Mean Difference	Estimated Effects Standard Error	Estimated Effects P-Value
Semester 6	0.14	0.79	0.35	1.37	-0.22	0.07	0.0036
Main session	0.11	0.69	0.30	1.18	-0.18	0.06	0.0043
Intersession	0.02	0.28	0.06	0.54	-0.03	0.03	0.2358
College-level credits attempted							
Semester 1	10.50	4.56	10.30	4.92	0.20	0.30	0.4960
Main session	8.98	3.58	8.93	3.90	0.06	0.24	0.8111
Intersession	1.52	2.17	1.37	2.28	0.14	0.14	0.2939
Semester 2	11.88	5.58	9.51	6.03	2.37	0.38	0.0000
Main session	9.97	4.35	8.31	5.01	1.67	0.31	0.0000
Intersession	1.91	2.50	1.21	2.26	0.71	0.15	0.0000
Semester 3	10.99	7.10	8.78	6.85	2.21	0.46	0.0000
Main session	9.11	5.67	7.61	5.85	1.50	0.38	0.0001
Intersession	1.88	2.52	1.17	2.16	0.71	0.14	0.0000
Semester 4	9.57	7.35	7.44	6.95	2.13	0.48	0.0000
Main session	8.16	6.19	6.56	6.09	1.59	0.41	0.0001
Intersession	1.41	2.32	0.88	1.96	0.54	0.14	0.0001
Semester 5	7.20	6.85	6.08	6.77	1.12	0.45	0.0140
Main session	6.42	6.17	5.31	5.89	1.10	0.40	0.0060
Intersession	0.78	1.74	0.76	1.81	0.02	0.12	0.8864
Semester 6	5.59	6.87	4.55	6.17	1.04	0.44	0.0171
Main session	4.90	5.97	4.09	5.53	0.82	0.38	0.0335
Intersession	0.69	1.91	0.46	1.52	0.23	0.11	0.0465
Sample size (total = 896)	451		445				

SOURCE: MDRC calculations from CUNY Institutional Research Database (IRDB) data.

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

A two-tailed t-test was applied to differences between research groups.

Estimates are adjusted by site and cohort.

Measures of credits earned in main sessions or intersessions do not exclude courses passed more than once. However, measures of credits earned in semesters exclude courses that are passed more than once.

Evaluation of Accelerated Study in Associate Programs (ASAP) for Developmental Education Students

Appendix Table C.3

Credits Earned: Three Years

Three-Year Impacts Report

Outcome	Program Group Mean	Program Group Standard Deviation	Control Group Mean	Control Group Standard Deviation	Estimated Effects Mean Difference	Estimated Effects Standard Error	Estimated Effects P-Value
Total credits earned							
Semester 1	11.36	5.78	9.31	6.38	2.05	0.40	0.0000
Main session	9.42	4.61	7.95	5.21	1.47	0.33	0.0000
Intersession	1.97	2.64	1.37	2.31	0.61	0.15	0.0001
Semester 2	10.10	6.77	7.86	6.69	2.24	0.45	0.0000
Main session	8.14	5.29	6.73	5.62	1.41	0.36	0.0001
Intersession	1.97	2.51	1.13	2.16	0.84	0.15	0.0000
Semester 3	8.92	7.07	7.19	6.77	1.73	0.46	0.0002
Main session	7.33	5.82	6.08	5.73	1.26	0.38	0.0011
Intersession	1.58	2.36	1.11	2.12	0.47	0.14	0.0009
Semester 4	7.62	7.02	6.05	6.72	1.56	0.46	0.0007
Main session	6.42	5.91	5.24	5.85	1.18	0.39	0.0026
Intersession	1.19	2.14	0.81	1.91	0.38	0.13	0.0034
Semester 5	5.47	6.13	4.92	6.13	0.55	0.41	0.1766
Main session	4.85	5.52	4.31	5.43	0.54	0.36	0.1367
Intersession	0.62	1.53	0.61	1.59	0.01	0.10	0.9121
Semester 6	4.33	6.06	3.83	5.61	0.50	0.39	0.2027
Main session	3.79	5.30	3.38	5.01	0.41	0.34	0.2345
Intersession	0.55	1.66	0.46	1.50	0.09	0.10	0.3871
Developmental credits earned							
Semester 1	2.88	3.14	1.75	2.69	1.13	0.19	0.0000
Main session	2.21	2.84	1.52	2.47	0.69	0.17	0.0001
Intersession	0.69	1.71	0.23	1.00	0.47	0.09	0.0000
Semester 2	1.11	2.15	0.80	1.87	0.31	0.13	0.0226
Main session	0.71	1.75	0.69	1.70	0.02	0.11	0.8361
Intersession	0.40	1.26	0.11	0.68	0.29	0.07	0.0000
Semester 3	0.51	1.62	0.43	1.50	0.08	0.10	0.4247
Main session	0.37	1.37	0.34	1.25	0.02	0.09	0.7803
Intersession	0.15	0.80	0.09	0.72	0.06	0.05	0.2447
Semester 4	0.21	0.98	0.47	1.54	-0.26	0.09	0.0024
Main session	0.18	0.91	0.38	1.34	-0.20	0.08	0.0089
Intersession	0.03	0.37	0.09	0.64	-0.06	0.04	0.0773
Semester 5	0.09	0.64	0.23	1.05	-0.14	0.06	0.0184
Main session	0.08	0.61	0.21	1.02	-0.12	0.06	0.0280
Intersession	0.01	0.19	0.02	0.28	-0.01	0.02	0.3850

(continued)

Appendix Table C.3 (continued)

Outcome	Program Group Mean	Program Group Standard Deviation	Control Group Mean	Control Group Standard Deviation	Estimated Effects Mean Difference	Estimated Effects Standard Error	Estimated Effects P-Value
Semester 6	0.00	0.00	0.15	0.88	-0.15	0.04	0.0003
Main session	0.00	0.00	0.12	0.73	-0.12	0.03	0.0007
Intersession	0.00	0.00	0.03	0.43	-0.03	0.02	0.0869
College-level credits earned							
Semester 1	8.49	4.95	7.56	5.58	0.92	0.34	0.0065
Main session	7.21	4.07	6.42	4.54	0.78	0.28	0.0055
Intersession	1.28	2.01	1.14	2.03	0.14	0.13	0.2723
Semester 2	8.99	6.27	7.05	6.16	1.93	0.41	0.0000
Main session	7.43	5.01	6.04	5.19	1.39	0.34	0.0000
Intersession	1.56	2.30	1.02	2.06	0.55	0.14	0.0001
Semester 3	8.41	6.87	6.76	6.46	1.65	0.44	0.0002
Main session	6.97	5.62	5.73	5.49	1.23	0.37	0.0009
Intersession	1.44	2.25	1.02	1.99	0.41	0.13	0.0019
Semester 4	7.41	6.90	5.58	6.30	1.83	0.44	0.0000
Main session	6.24	5.82	4.86	5.52	1.38	0.38	0.0003
Intersession	1.16	2.11	0.72	1.80	0.44	0.13	0.0004
Semester 5	5.38	6.05	4.69	5.90	0.69	0.40	0.0837
Main session	4.77	5.47	4.11	5.21	0.66	0.35	0.0615
Intersession	0.61	1.50	0.58	1.57	0.03	0.10	0.8027
Semester 6	4.33	6.06	3.68	5.43	0.65	0.38	0.0919
Main session	3.79	5.30	3.26	4.88	0.53	0.34	0.1221
Intersession	0.55	1.66	0.42	1.45	0.13	0.10	0.2239
Sample size (total = 896)	451		445				

SOURCE: MDRC calculations from CUNY Institutional Research Database (IRDB) data.

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

A two-tailed t-test was applied to differences between research groups.

Estimates are adjusted by site and cohort.

Measures of credits earned in main sessions or intersessions do not exclude courses passed more than once. However, measures of credits earned in semesters exclude courses that are passed more than once.

Evaluation of Accelerated Study in Associate Programs (ASAP) for Developmental Education Students

Appendix Table C.4

Credits Attempted: Three Years (Cumulative)

Three-Year Impacts Report

Outcome	Program Group Mean	Program Group Standard Deviation	Control Group Mean	Control Group Standard Deviation	Estimated Effects Mean Difference	Estimated Effects Standard Error	Estimated Effects P-Value
Sessions enrolled							
Semester 1 (out of 2)	1.55	0.57	1.31	0.58	0.24	0.03	0.0000
Semester 2 (out of 4)	2.99	1.03	2.41	1.10	0.58	0.07	0.0000
Semester 3 (out of 6)	4.20	1.59	3.37	1.64	0.83	0.10	0.0000
Semester 4 (out of 8)	5.21	2.13	4.18	2.18	1.02	0.14	0.0000
Semester 5 (out of 10)	5.97	2.59	4.87	2.69	1.10	0.17	0.0000
Semester 6 (out of 12)	6.57	2.99	5.38	3.07	1.18	0.20	0.0000
Total credits attempted							
Semester 1	16.10	4.71	13.92	5.04	2.18	0.32	0.0000
Semester 2	30.60	8.93	25.14	9.93	5.46	0.62	0.0000
Semester 3	42.89	14.34	34.87	15.21	8.01	0.97	0.0000
Semester 4	53.06	19.71	43.18	20.81	9.88	1.34	0.0000
Semester 5	60.54	24.07	49.89	25.58	10.65	1.65	0.0000
Semester 6	66.27	28.01	54.79	29.29	11.48	1.90	0.0000
Developmental credits attempted							
Semester 1	5.60	3.83	3.62	3.36	1.98	0.24	0.0000
Semester 2	8.22	5.73	5.33	4.43	2.89	0.34	0.0000
Semester 3	9.52	7.02	6.28	4.97	3.23	0.40	0.0000
Semester 4	10.11	7.72	7.15	5.55	2.97	0.45	0.0000
Semester 5	10.40	8.07	7.78	6.13	2.63	0.48	0.0000
Semester 6	10.54	8.24	8.13	6.59	2.41	0.50	0.0000
College-level credits attempted							
Semester 1	10.50	4.56	10.30	4.92	0.20	0.30	0.4960
Semester 2	22.39	8.72	19.81	9.49	2.57	0.59	0.0000
Semester 3	33.37	13.81	28.59	14.39	4.78	0.92	0.0000
Semester 4	42.94	19.00	36.03	19.56	6.91	1.27	0.0000
Semester 5	50.14	23.29	42.11	23.85	8.03	1.56	0.0000
Semester 6	55.73	27.20	46.66	27.41	9.07	1.81	0.0000
Sample size (total = 896)	451		445				

(continued)

Appendix Table C.4 (continued)

SOURCE: MDRC calculations from CUNY Institutional Research Database (IRDB) data.

NOTES: Rounding may cause slight discrepancies in sums and differences.
A two-tailed t-test was applied to differences between research groups.
Estimates are adjusted by site and cohort.
Measures of cumulative credits earned exclude courses that are passed more than once.
Enrollment is based on courses in which students are still enrolled as of the end of the add/drop period.

Evaluation of Accelerated Study in Associate Programs (ASAP) for Developmental Education Students

Appendix Table C.5

Credits Earned: Three Years (Cumulative)

Three-Year Impacts Report

Outcome	Program Group Mean	Program Group Standard Deviation	Control Group Mean	Control Group Standard Deviation	Estimated Effects Mean Difference	Estimated Effects Standard Error	Estimated Effects P-Value
Sessions enrolled							
Semester 1 (out of 2)	1.55	0.57	1.31	0.58	0.24	0.03	0.0000
Semester 2 (out of 4)	2.99	1.03	2.41	1.10	0.58	0.07	0.0000
Semester 3 (out of 6)	4.20	1.59	3.37	1.64	0.83	0.10	0.0000
Semester 4 (out of 8)	5.21	2.13	4.18	2.18	1.02	0.14	0.0000
Semester 5 (out of 10)	5.97	2.59	4.87	2.69	1.10	0.17	0.0000
Semester 6 (out of 12)	6.57	2.99	5.38	3.07	1.18	0.20	0.0000
Total credits earned							
Semester 1	11.36	5.78	9.31	6.38	2.05	0.40	0.0000
Semester 2	21.45	10.99	17.13	11.87	4.31	0.75	0.0000
Semester 3	30.34	16.52	24.31	17.24	6.03	1.12	0.0000
Semester 4	37.93	21.57	30.35	22.27	7.58	1.45	0.0000
Semester 5	43.37	25.36	35.22	26.42	8.15	1.72	0.0000
Semester 6	47.68	28.87	39.01	29.86	8.67	1.95	0.0000
Developmental credits earned							
Semester 1	2.88	3.14	1.75	2.69	1.13	0.19	0.0000
Semester 2	3.98	3.72	2.54	3.24	1.43	0.23	0.0000
Semester 3	4.49	3.95	2.97	3.47	1.52	0.25	0.0000
Semester 4	4.69	4.00	3.44	3.77	1.25	0.26	0.0000
Semester 5	4.79	4.03	3.67	4.02	1.11	0.27	0.0000
Semester 6	4.79	4.03	3.82	4.13	0.96	0.27	0.0004
College-level credits earned							
Semester 1	8.49	4.95	7.56	5.58	0.92	0.34	0.0065
Semester 2	17.47	9.93	14.59	10.63	2.88	0.67	0.0000
Semester 3	25.85	15.43	21.34	15.75	4.51	1.02	0.0000
Semester 4	33.24	20.41	26.91	20.57	6.33	1.35	0.0000
Semester 5	38.59	24.17	31.55	24.46	7.04	1.61	0.0000
Semester 6	42.89	27.70	35.18	27.80	7.71	1.84	0.0000
Sample size (total = 896)	451		445				

(continued)

Appendix Table C.5 (continued)

SOURCE: MDRC calculations from CUNY Institutional Research Database (IRDB) data.

NOTES: Rounding may cause slight discrepancies in sums and differences.
A two-tailed t-test was applied to differences between research groups.
Estimates are adjusted by site and cohort.
Measures of cumulative credits earned exclude courses that are passed more than once.
Enrollment is based on courses in which students are still enrolled as of the end of the add/drop period.

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EARLIER PUBLICATIONS ON CUNY'S ACCELERATED STUDY IN ASSOCIATE PROGRAMS (ASAP)

More Graduates: Two-Year Results from an Evaluation of Accelerated Study in Associate Programs (ASAP) for Developmental Education Students
2013. Susan Scrivener and Michael J. Weiss

What Can a Multifaceted Program Do for Community College Students? Early Results from an Evaluation of Accelerated Study in Associate Programs (ASAP) for Developmental Education Students
2012. Susan Scrivener, Michael J. Weiss, and Colleen Sommo

NOTE: A complete publications list is available from MDRC and on its website (www.mdrc.org), from which copies of reports can also be downloaded.

About MDRC

MDRC is a nonprofit, nonpartisan social and education policy research organization dedicated to learning what works to improve the well-being of low-income people. Through its research and the active communication of its findings, MDRC seeks to enhance the effectiveness of social and education policies and programs.

Founded in 1974 and located in New York City and Oakland, California, MDRC is best known for mounting rigorous, large-scale, real-world tests of new and existing policies and programs. Its projects are a mix of demonstrations (field tests of promising new program approaches) and evaluations of ongoing government and community initiatives. MDRC's staff bring an unusual combination of research and organizational experience to their work, providing expertise on the latest in qualitative and quantitative methods and on program design, development, implementation, and management. MDRC seeks to learn not just whether a program is effective but also how and why the program's effects occur. In addition, it tries to place each project's findings in the broader context of related research — in order to build knowledge about what works across the social and education policy fields. MDRC's findings, lessons, and best practices are proactively shared with a broad audience in the policy and practitioner community as well as with the general public and the media.

Over the years, MDRC has brought its unique approach to an ever-growing range of policy areas and target populations. Once known primarily for evaluations of state welfare-to-work programs, today MDRC is also studying public school reforms, employment programs for ex-offenders and people with disabilities, and programs to help low-income students succeed in college. MDRC's projects are organized into five areas:

- Promoting Family Well-Being and Children's Development
- Improving Public Education
- Raising Academic Achievement and Persistence in College
- Supporting Low-Wage Workers and Communities
- Overcoming Barriers to Employment

Working in almost every state, all of the nation's largest cities, and Canada and the United Kingdom, MDRC conducts its projects in partnership with national, state, and local governments, public school systems, community organizations, and numerous private philanthropies.