Making an Impact

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Impacts of Ramp-Up to Readiness™ after one year of implementation

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Key findings

Ramp-Up to Readiness™ (Ramp-Up) is a program for middle and high school students that aims to provide greater depth and breadth of support for college readiness than do current supports. In this study 49 schools in Minnesota and western Wisconsin were randomly assigned to implement Ramp-Up during 2014/15 (Ramp-Up group) or to conduct business as usual (comparison group). After one year of implementation, students in the two groups of schools showed no significant differences in rates of completion of the Free Application for Federal Student Aid or in rates of submission of at least one college application. Students in the two groups of schools also had similar scores on the ACT Engage goal striving and commitment to college scales. Staff in Ramp-Up schools reported more college-oriented activity and students in those schools perceived more emphasis on two of the five dimensions of college readiness than did their counterparts in comparison schools. Implementation fidelity was adequate for 96 percent of Ramp-Up schools, yet implementation was uneven across program components.

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Summary

College education is fundamental to students' upward mobility, states' economic growth, and the country's economic competitiveness (Bureau of Labor Statistics, 2015; Hanushek & Kimko, 2000; Hanushek & Woessmann, 2012). Researchers have forecast that 63 percent of future jobs will require a college degree, yet in the coming years the United States will likely produce 3 million fewer college graduates than are needed to fill workforce demand (Carnevale, Smith, & Stohl, 2010). With these statistics and projections in mind, policymakers are placing greater emphasis on motivating high school students to attend college and on ensuring that students have the skills needed to succeed in college. Minnesota legislators, for example, have called on the public K–12 education system to motivate middle school students to attend college and to help high school students plan for college as a means of attaining their career aspirations (Grow, 2013).

To better enable middle and high schools to increase college participation and success rates among their students, the University of Minnesota's College Readiness Consortium developed Ramp-Up to Readiness™ (Ramp-Up), a schoolwide advisory program to increase students' likelihood of college enrollment and completion by enhancing five dimensions of college readiness (academic, admissions, career, financial, and personal–social) among middle school and high school students. As of 2016, the program has been rolled out in 150 middle and high schools throughout Minnesota, but little information is available on the program's effectiveness.

Members of the Midwest College and Career Success Research Alliance expressed an interest in learning how the program attempts to improve students' college readiness, how it differs from typical college-readiness supports in high schools, how it is implemented, whether schools meet the consortium's expectations for implementation, how school staff perceive the program, and whether the program has an immediate impact on student outcomes. Since 2012 Regional Educational Laboratory Midwest has worked with alliance members to answer these questions.

This report describes a study of the impacts of the Ramp-Up program after one year of implementation and provides information on how Ramp-Up differs from college-related supports in other schools and the degree to which Ramp-Up has been implemented with fidelity.

This study involved 49 public high schools serving grades 10–12 in Minnesota and western Wisconsin. Twenty-five of the 49 schools were randomly assigned to implement Ramp-Up during the 2014/15 academic year (Ramp-Up schools), and the other 24 schools were randomly assigned to continue with business as usual during 2014/15 and then implement Ramp-Up during 2015/16 (comparison schools). The final analytic sample was smaller than expected, which made it harder to detect program impacts. Data collected in fall 2014 and spring 2015 were used to examine the impact of the program after one year of implementation on students' scores on the ACT Engage goal striving and commitment to college scales along with their likelihood of completing the Free Application for Federal Student Aid [FAFSA] and submitting at least one college application. The study also addressed questions about whether the types of college-readiness supports offered by Ramp-Up schools differed from those offered by comparison schools, whether staff in Ramp-Up schools

engaged in more college-oriented activity, and whether Ramp-Up schools in 2014/15 were able to implement the program adequately by consortium standards.

The study's main findings are:

- After a single year of implementation, there were no statistically significant differences on self-reported goal striving or commitment to college scores or on likelihood of completing the FAFSA and submitting at least one college application between students in Ramp-Up schools and students in comparison schools.
- Ramp-Up schools and comparison schools offered the same types of supplemental college-readiness supports.
- Staff in Ramp-Up schools engaged in more college-readiness activity than did staff in comparison schools. Students in Ramp-Up schools perceived a greater emphasis among staff on two of the five dimensions of college readiness (admissions readiness and financial readiness) than did students in comparison schools.
- When averaged across program components, 96 percent of Ramp-Up schools' implementation scores fell within the range that the program developer classified in advance as adequate. However only 3 of the 25 (12 percent) Ramp-Up schools had adequate scores for all five of Ramp-Up's key components (structural supports, professional development, curriculum delivery, curriculum content, and postsecondary planning tools), suggesting that Ramp-Up schools need to improve implementation if they hope to produce the program's intended impacts.

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Why this study?

College education is fundamental to students' upward mobility, states' economic growth, and the country's economic competitiveness (Bureau of Labor Statistics, 2015; Hanushek & Kimko, 2000; Hanushek & Woessmann, 2012). Ninety-three percent of graduating seniors plan to enroll in college (Ross et al., 2012), yet 79 percent of students in the United States do so by age 20 (Center for Public Education, 2014). Of the students who enroll, only 65 percent attain a postsecondary certificate or degree (Snyder & Dillow, 2015).

What obstacles do high school students face that prevent them from actualizing their college aspirations? Some high school seniors who plan to go to college struggle with completing financial aid applications (such as the Free Application for Federal Student Aid [FAFSA]) or submitting college applications (Avery & Kane, 2004; Roderick, Nagaoka, Coca, & Moeller, 2008). Other students may be among the 30 percent of applicants who fail to gain admittance to their desired college because of poor scores on college admissions tests or low grade point average or class rank (Clinedinst, 2015).

Faced with the gap between high school students' college aspirations and the actual percentage of students who attain a postsecondary certificate or degree, policymakers are expecting K–12 school systems to better prepare students to enroll and succeed in college.

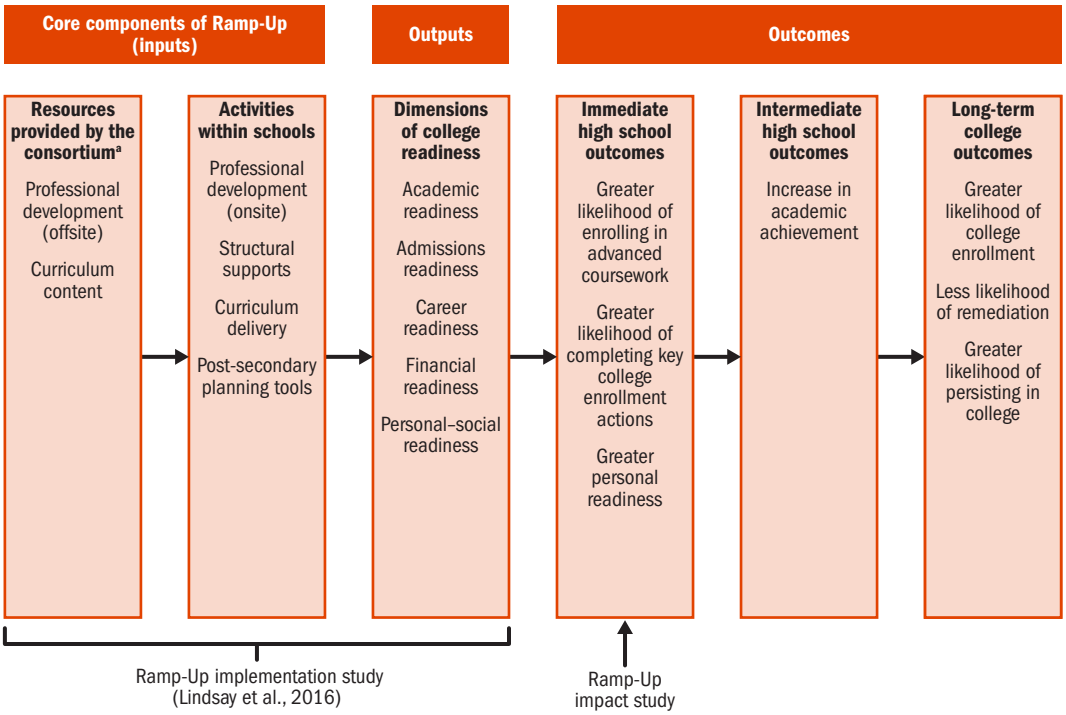
To help high schools in this endeavor, the What Works Clearinghouse convened a panel of experts to offer five recommendations for helping students obtain postsecondary education outcomes.[1] The panel recommended that schools offer students more rigorous courses and curricula, use assessments to track students' progress on admissions criteria, group students with others who aspire for a college education, assist students with the college admissions process, and increase families' understanding of the financial burden associated with college and of how to apply for financial aid (Tierney, Bailey, Constantine, Finkelstein, & Hurd, 2009). Empirical support for these recommendations is lacking, however. The What Works Clearinghouse found that only 16 of 500 studies related to these recommended practices met its standards for evidence (Tierney et al., 2009).

For many policymakers and practitioners, more evidence on the benefits of these practices is needed. One group of stakeholders that seeks to better understand the processes and interventions that enhance college going, college completion, and workforce success is the Midwest College and Career Success Research Alliance.[2] Alliance members are especially interested in learning more about a college-readiness program that incorporates most of the What Works Clearinghouse's recommended practices: the University of Minnesota's College Readiness Consortium Ramp-Up to Readiness™ program (Ramp-Up). The consortium developed Ramp-Up as a schoolwide guidance program to increase middle and high school students' likelihood of college enrollment and completion by enhancing five dimensions of college readiness: academic, admissions, career, financial, and personal–social (box 1; see appendix A for a more detailed description of the program and a timeline of its implementation in Minnesota and Wisconsin high schools).

Because each of Ramp-Up's five dimensions of college readiness is aligned with practices recommended by the What Works Clearinghouse and supported by a limited number of studies (mostly correlational; see appendix A of Lindsay, Davis, Stephan, Bonsu, & Narlock, 2016, for a review of the literature), alliance members think that the program shows promise for increasing students' college readiness and their likelihood of college enrollment and completion (see figure 1 for Ramp-Up's theory of action). However, the program as a whole has yet to be evaluated.

Because each of the five dimensions of the Ramp-Up to Readiness program is aligned with practices recommended by the What Works Clearinghouse and supported by a limited number of studies, members of the Midwest College and Career Success Research Alliance think that it shows promise for increasing students' college readiness and their likelihood of college enrollment and completion

Figure 1. Ramp-Up to Readiness theory of action



Note: With high fidelity implementation and improvements in the dimensions of college readiness, the consortium expects immediate outcomes after one year of exposure to Ramp-Up, intermediate outcomes after two years of exposure to Ramp-Up, and long-term outcomes after three years exposure to Ramp-Up.

a. The University of Minnesota's College Readiness Consortium.

Source: The University of Minnesota's College Readiness Consortium.

Box 1. Ramp-Up to Readiness™ program description

Ramp-Up to Readiness™ is a research-based school guidance intervention developed by the University of Minnesota's College Readiness Consortium. It consists of a guidance curriculum for middle school and high school students, a set of tools to help students set college goals and track progress, and professional development for implementation teams and teachers. The theory of action that underlies the program (see figure 1 in the main text) posits that increasing students' knowledge and skills along five dimensions of college readiness (academic, admissions, career, financial, and personal–social; defined below) will increase their likelihood enrolling and succeeding in college.

Core components of Ramp-Up

Ramp-Up involves five core components, each of which includes a set of resources and activities provided by the consortium and enacted in schools:

- *Structural supports.* Schools need to establish a Ramp-Up leadership team; appoint a Ramp-Up coordinator; enlist homeroom teachers to become Ramp-Up advisors; provide students with opportunities to enroll in advanced courses; provide support for professional development for administrators, teachers, and counselors; offer time for preparing and conducting advisory sessions and workshops; and adopt a technology platform for creating, storing, and sharing students' postsecondary plans. Ramp-Up leadership teams consist of the principal, one counselor, one teacher, and any other suitable individuals. Their responsibilities include creating an annual plan and implementation calendar, guiding and monitoring implementation, attending training and

(continued)

Box 1. Ramp-Up to Readiness™ program description *(continued)*

workshops offered by the program developer, and providing professional development to all staff who deliver the program.

- *Professional development.* Schools' Ramp-Up leadership teams and coordinators need to participate in off-site professional development sessions led by the consortium, and school Ramp-Up leadership teams and coordinators must provide on-site professional development to staff who serve as Ramp-Up advisors.
- *Curriculum delivery.* Ramp-Up advisors must have the necessary materials and information to understand the Ramp-Up curriculum, and they need to facilitate the 28 advisory sessions and 5 workshops at the high school with the students in their homerooms.
- *Curriculum content:* The content of the Ramp-Up advisory sessions and workshops must cover all five dimensions of college readiness. If Ramp-Up advisors follow the activities and workshops provided in their grade-specific advisor guides, students should perceive staff-student interactions related to each of the five dimensions.
- *Postsecondary planning tools:* Ramp-Up advisors and students need to create a postsecondary plan, complete the consortium's college-readiness rubric, review and update the plan and rubric given students' experiences, and communicate students' progress to their parents.

Dimensions of college readiness

The program developer hypothesizes that Ramp-Up's curriculum, tools, and professional development will increase college readiness by teaching skills and providing information, assistance, and encouragement in five interrelated dimensions of college readiness (College Readiness Consortium, 2012):

- *Academic readiness:* "The student has the knowledge and skills to do first-year, credit-bearing, college-level work" (p. 9).
- *Admissions readiness:* "The student has completed all requirements for admission to the type of postsecondary education that is a match for their goals, interests and abilities" (p. 9).
- *Career readiness:* "The student understands how education increasingly determines income and opportunity in the global knowledge economy, and will know which types of jobs in the future will need skilled workers, will pay enough to support a family and might be a good match for their interests and abilities" (p. 10).
- *Financial readiness:* "Students will be able to cover the cost for one term of study [that is, a degree program] at a postsecondary institution through savings, loans, work-study, and financial aid" (p. 10).
- *Personal and social readiness:* "The student knows how to set educational goals, make progress toward those goals, and create relationships with peers and adults that support the achievement of those goals" (p. 11).

Outcomes

According to Ramp-Up's theory of action, the program has immediate, intermediate, and long-term outcomes. Immediate outcomes are those that the developer believes can be achieved after a single school year of exposure to the program and include completing the Free Application for Federal Student Aid (for high school seniors), taking college entrance exams, and developing and pursuing personal goals and commitment to go to college. Intermediate outcomes are those that the developer believes can be achieved after two years of exposure to the program and include improved grades and state standardized test scores. Long-term outcomes are those that the developer believes can be achieved after three years of exposure to the program and include increased likelihood of enrolling in a two- or four-year college, decreased likelihood of needing remedial coursework in college, and increased likelihood of persisting in college.

Impacts of the program result, theoretically, from the cumulative growth across all five dimensions of readiness. No one-to-one correspondence is hypothesized between the outcomes and the college-readiness dimensions.

What the study examined

Members of the alliance partnered with REL Midwest to answer the questions most frequently asked about Ramp-Up by school and school district administrators, which include:

- What is the program, and how is it different from what is currently offered?
- What does implementation entail for schools, and have schools been able to implement the program to the developer's specifications?
- What do educators consider Ramp-Up's strengths and weaknesses?
- Does the program have an impact on student outcomes?

Overview of Regional Educational Laboratory Midwest's two studies of Ramp-Up

A previous REL Midwest study described Ramp Up and how it supplements other college-readiness supports, documented the degree to which schools were able to implement the program during a single year, and summarized perceptions of the program among school staff (Lindsay et al., 2016). That study, referred to here as the Ramp-Up implementation study, included 20 schools in Minnesota. Ten schools in that study implemented Ramp-Up immediately (2013/14), and 10 schools delayed implementation by one year. The Ramp-Up implementation study addressed the first three questions above (through interviews and focus groups) but was unable to look at program impact.

The current study examined the immediate impacts of the Ramp-Up program on students' college enrollment actions and self-reported personal readiness and examined implementation to give context to the impact estimates

The current study, referred to as the impact study, examined the immediate impacts of the program on students' college enrollment actions and self-reported personal readiness (figure 1) by randomly assigning an additional 50 schools (beyond the original 20 schools from the Ramp-Up implementation study) to either implement Ramp-Up immediately (during the 2014/15 school year) or to delay implementation until the following year (2015/16).[3] The current study examines implementation only to give context to the impact estimates.

The Ramp-Up implementation study found that the program supplements the college-related supports that schools already tend to have in place (for example, access to dual-credit courses and Upward Bound, college visits, financial aid nights) while engaging with students at earlier grade levels to begin developing the five dimensions of readiness and to enhance students' likelihood of participating in other college-related supports (Lindsay, et. al, 2016). The implementation study also showed that schools were generally able to implement Ramp-Up (average implementation ratings showed "adequate" fidelity) but that Ramp-Up advisors in 80 percent of schools did not adequately implement the postsecondary planning tools component of Ramp-Up (assisting students in creating their postsecondary plans, tracking students' progress on the college-readiness rubric, and communicating students' progress to their parents; Lindsay et al., 2016).

Research questions for the current study

This impact study focuses on whether schools and districts that adopt Ramp-Up are likely to see an impact on student outcomes after the first year of implementation.

This study addresses two confirmatory research questions:

- What is the impact of Ramp-Up on the likelihood of grade 12 students completing the FAFSA?
- What is the impact of Ramp-Up on grade 10, 11, and 12 students' scores on the ACT Engage goal striving and commitment to college scales?

The study also addressed two exploratory research questions:

- What is the impact of Ramp-Up on the likelihood of grade 12 students submitting at least one college application?
- What is the impact of Ramp-Up on ACT Engage goal striving and college commitment scale scores, the likelihood of FAFSA completion, and the likelihood of submitting at least one college application for students who scored in the upper third on the grade 8 state standardized math test, students who scored in the middle third on the grade 8 state standardized math test, and students who are eligible for the federal school lunch program?

These questions were exploratory because the program developer had no firm expectations that these outcomes would be affected by the program within a single year.

The final research question examined variation in the impact of Ramp-Up on the four outcomes for students who scored in the upper third and those who scored in the middle third on the grade 8 state standardized math test. Students in the upper third were likely to have completed key college actions regardless of participation in Ramp-Up, possibly diluting program impacts, so the study team looked at the upper and middle tertiles separately to determine whether there were differential impacts by prior level of achievement. In addition, the study examined differences in the impact of Ramp-Up on the four outcomes for students who are eligible for the federal school lunch program (a proxy for economic disadvantage). Prior research suggests that low-income students or those whose parents did not attend college have greater needs for assistance in the college-enrollment process and less access to academic opportunities to prepare them for college (Avery & Kane, 2004; Lareau & Wieninger, 2008; McDonough, 1997). Because Ramp-Up attempts to target those needs, the impact of Ramp-Up may be strongest among students who would be less likely to consider attending college because of their family's financial status. An analysis of Ramp-Up's impact on students eligible for the federal school lunch program could provide evidence of whether Ramp-Up had an impact on this subgroup.

The research questions were addressed through a randomized controlled trial in which half of participating schools were randomly assigned to begin implementing Ramp-Up during the 2014/15 school year and the other half continued their normal college readiness programming until 2015/16

To establish context surrounding the estimates of Ramp-Up's immediate impacts, the study also examined three implementation questions, similar to those asked in the Ramp-Up implementation study (Lindsay, et. al, 2016):

- Are there differences in the number or types of supplemental college-readiness supports (that is, programs or services) between Ramp-Up schools and comparison schools?
- Are there differences between Ramp-Up schools and comparison schools in staff engagement in college-oriented activities (adoption of curriculum and technology, professional development, college-focused student interactions, and postsecondary planning)?
- To what extent did schools implement the core components of Ramp-Up (structural supports, professional development, curriculum delivery, curriculum content, and postsecondary planning tools) as intended by the program developer?

The research questions were addressed through a randomized controlled trial in which half of participating schools were randomly assigned to begin implementing Ramp-Up during the 2014/15 school year and the other half continued their normal college readiness programming until 2015/16. See box 2 for a summary of the data and methods used in the study and appendix B for more detail.

Box 2. Data and methods

Study design. This study was a randomized controlled trial. Fifty schools serving grades 10–12 (48 in Minnesota and 2 in western Wisconsin) applied to participate in this study in return for receiving training, materials, and coaching for the University of Minnesota's College Readiness Consortium Ramp-Up to Readiness™ program at no cost. The study team randomly assigned schools to implement Ramp-Up either during the 2014/15 school year (the Ramp-Up group) or during the 2015/16 school year (the comparison group) through a two-stage process. First, the study team grouped schools into seven blocks, each comprising schools that were similar either by location or by a score that combined a school's rate of math proficiency with its rate of student eligibility for the federal school lunch program. Second, half the schools within each block were randomly assigned to one of the two conditions (see figure B1 in appendix B for details on the randomization procedure). The study team randomly assigned each of the two Wisconsin schools to different study conditions. One school in the comparison group dropped out of the study after schools were randomly assigned to groups, so the final analytic sample included 49 schools: 25 schools in the Ramp-Up group and 24 schools in the comparison group.

Data collection. To address the research questions, the study team collected the following data:

- School-level data from the Minnesota Department of Education and the Wisconsin Department of Public Instruction.
- Extant student records from schools and school districts.
- Responses to a survey administered in fall 2014 to students in grades 10–12 in both groups of schools and a follow-up survey administered to those same students in spring 2015. (Data on completion of the Free Application for Federal Student Aid [FAFSA] and submission of college applications are from these surveys.)
- Responses to items on ACT Engage, a survey that measures student factors associated with academic success, such as student motivation and skills, social engagement, and self-regulation and that was administered to randomly selected students in grades 10–12 in the fall and spring (see appendix B for more details on the ACT Engage survey). Analyses focused on the goal striving and commitment to college scales from the survey.
- Teachers' responses to items on five online instructional logs (Ramp-Up schools only).
- Responses to an online survey administered to staff in all schools in the fall and to staff in Ramp-Up schools only in the spring.
- Extant documents from the consortium regarding Ramp-Up implementation.

See table B2 in appendix B for a crosswalk of what data were used to address each research question.

Immediate outcome measures. The study team constructed the following outcome measures to address the confirmatory and exploratory research questions:

- *FAFSA completion.* In spring 2015 students completed a survey that asked "Have you submitted the Free Application for Federal Student Aid (FAFSA) so far this school year?" A dichotomous variable was created, with 1 representing having completed it and 0 representing not having completed it or not knowing.
- *Personal college readiness.* Two scales from ACT Engage were used to measure students' personal college readiness: goal striving and commitment to college. Goal striving is a composite of 10 items that measure the "strength of [a student's] efforts to achieve [his or her] objectives and end goals" (ACT, 2012, p. 2). Sample items in this scale include "Once I set a goal, I do my best to achieve it" and "I bounce back after facing disappointment or failure" (ACT, 2012, p. 34). Commitment to college is a composite of 10 items that measure a student's commitment to enrolling in and completing college (ACT, 2012). Sample items in this scale include "A college education will help me achieve my goals" and "I am committed to attend and finish college regardless of obstacles" (ACT, 2012, p. 33).
- *College applications.* In spring 2015, students completed a survey that asked "How many applications, if any, have you submitted so far this school year?" A dichotomous variable was created, with 1 representing having submitted at least one college application and 0 representing having submitted no college applications.

(continued)

Box 2. Data and methods *(continued)*

Student-level sample sizes. The sample size for the four outcome measures ranged from 1,526 students for submitting at least one college application to 2,128 students for FAFSA completion. The sample size for the two measures of personal college readiness was 2,309 students.

Magnitude of effects. The magnitude of the effects of Ramp-Up are presented as odds ratios for the dichotomous outcomes of likelihood of FAFSA completion and likelihood of submitting at least one college application and as Hedges's *g* for the continuous outcomes of ACT goal striving and commitment to college scale scores. Odds ratio is a standardized metric for conveying the magnitude of a group difference for a binary outcome. Odds ratios can be interpreted as the change in odds of performing the action that would occur as a function of being in the intervention group rather than the control group. For example, an odds ratio of 1.3 for FAFSA completion would suggest that if the average student moved from a comparison school to a Ramp-Up school, the odds of completing the FAFSA would increase 30 percent. Hedges's *g* is a standardized metric for conveying the magnitude of a group difference on a continuous outcome. Hedges's *g* represents the difference in mean values between the two groups in standard deviation units for the comparison group. See appendix B for more information on how these effect sizes are calculated.

See appendix B for more information about data sources, missing data, imputation methods, and outcome measures.

Data analysis. Confirmatory and exploratory research questions were addressed using hierarchical linear models with students nested in schools. Student-level covariates (indicator variables for race/ethnicity, gender, eligibility for the federal school lunch program, Individualized Education Program status, English learner status, grade level, unweighted cumulative high school grade point average, and Minnesota Comprehensive Assessment or Wisconsin Concepts and Knowledge Examination math scores) and school-level covariates (indicator variables for treatment condition, randomization block membership, and a prior school-level measure of the dependent variable such as the percentage of grade 12 students submitting the Free Application for Federal Student Aid in 2013/14) were used to statistically control for other potential factors that may affect the outcomes of interest. To address questions about treatment contrast, the study team examined staff members' responses to survey items about college-readiness supports, students' and staff members' responses to survey items about college-focused activities, and students' responses to survey items about the five dimensions of readiness.

To address questions about fidelity of implementation among Ramp-Up schools, the study team worked with the consortium to break down Ramp-Up's logic model and implementation model into core components, subcomponents, and the types of evidence (or indicators) that would verify whether the subcomponents were fully implemented (coded 1) or partially implemented (coded between 0 and 1; see figure B2 in appendix B). The study team calculated the percentage of indicators present for each subcomponent and component per school (the fidelity indexes). The consortium established thresholds for categorizing fidelity indexes as indicative of excellent fidelity (90 percent or higher), adequate fidelity (60–89 percent), or inadequate fidelity (at or below 59 percent) during the first year of implementation.

Baseline equivalence. The study team first examined the characteristics of schools at baseline. The differences between the two groups of schools ranged from 0.00 standard deviation unit (ACT composite score) to 0.41 standard deviation unit (percentage of student population that is Native American). However, none of the differences was statistically significant (see table C1 in appendix C).

What the study found

After one year of implementation, Ramp-Up did not have an impact on the three immediate outcomes examined in this study: likelihood of completing the FAFSA, score on the ACT Engage goal striving scale, and score on the ACT Engage commitment to college scale. Nor did Ramp-Up have a statistically significant impact on students' submission of at least one college application. No differences were found across the student subgroups examined. Results also suggested uneven implementation, with most, but not all, schools adequately implementing some components.

After the first year of implementation, students in Ramp-Up schools and students in comparison schools were equally likely to complete the Free Application for Federal Student Aid and had similar levels of personal college readiness

While the percentage of grade 12 students who reported completing the FAFSA was higher in Ramp-Up schools (58 percent) than in comparison schools (51 percent), the difference was not statistically significant after other student- and school-level factors were controlled for

The analysis of students' FAFSA completion and personal college readiness statistically controlled for other student- and school-level factors. Little difference was found between students in Ramp-Up schools and students in comparison schools (figure 2; see also table C2 in appendix C).

Submission of the Free Application for Federal Student Aid. While the percentage of grade 12 students who reported completing the FAFSA was higher in Ramp-Up schools (58 percent) than in comparison schools (51 percent; see figure 2), the difference was not statistically significant after other student- and school-level factors were controlled for (odds ratio = 1.3, p = .292). If the study had included a larger sample of students and schools, the difference between the Ramp-Up and comparison school students could have been statistically significant.

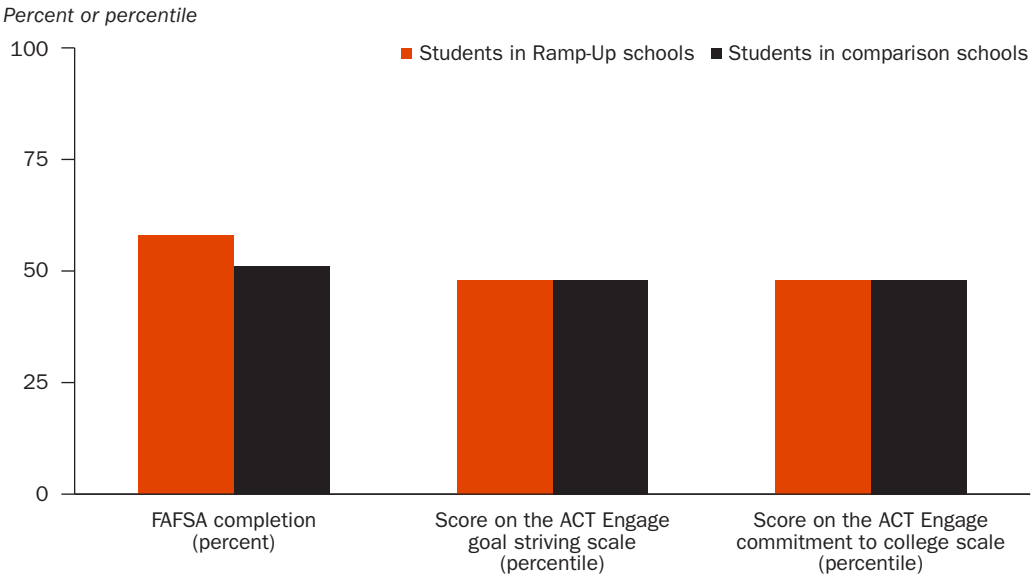
ACT Engage goal striving scale score. No differences were found in students' ACT Engage goal striving scale scores between Ramp-Up schools (mean = 48, standard deviation = 8.4) and comparison schools (mean = 48, standard deviation = 7.9; Hedges's g = –0.02, p = .854).

ACT Engage commitment to college scale score. No differences were found in students' ACT Engage commitment to college scale scores between Ramp-Up schools (mean = 48, standard deviation = 9.9) and comparison schools (mean = 48, standard deviation = 9.6; Hedges's g = –0.04, p = .957).

After the first year of implementation, students in Ramp-Up schools and students in comparison schools were equally likely to submit at least one college application

The percentage of grade 12 students who submitted at least one college application was higher in Ramp-Up schools (88 percent) than in comparison schools (82 percent), but the difference was not statistically significant once other student- and school-level factors were controlled for (odds ratio = 1.26, p = .477; see table C2 in appendix C).[4] The analysis of Ramp-Up's impact on this outcome after one year of implementation is considered exploratory because the program developer was unsure whether a single year of implementation would be sufficient to produce impacts on submission of college applications.

Figure 2. Students in Ramp-Up schools and students in comparison schools showed little difference in immediate outcomes, 2014/15



FAFSA is the Free Application for Federal Student Aid.

Note: FAFSA completion is the average percentage of students who completed the application, after adjustment for covariates. The average scores for the two ACT Engage scales are average percentile scores after adjustment for covariates. None of the differences between Ramp-Up schools and comparison schools was statistically significant at the $p < .05$ level. Results for FAFSA completion are based on 2,128 grade 12 students in 43 schools. Results for ACT Engage goal striving and commitment to college scale scores are based on 2,039 students in 45 schools. For both analyses, schools that were included in the analytic samples did not differ significantly from schools that were not included in the sample on any baseline measures, including eligibility for the federal school lunch program, the percentage of English learner students, the percentage of students with an Individualized Education Program, percentages of racial/ethnic minority students, standardized test scores, graduation rates, or average ACT scores.

Source: Authors' analysis of data from student surveys and ACT Engage surveys.

No differences were found in students' ACT Engage goal striving scale scores or in students' ACT Engage commitment to college scale scores between Ramp-Up schools and comparison schools

After the first year of implementation, Ramp-Up had no impacts on immediate and exploratory outcomes among subgroups of students

The results show no impacts of Ramp-Up among students who scored in the upper third on the grade 8 state standardized math test, among students who scored in the middle third on the test, or among students eligible for the federal school lunch program (see tables C3, C4, C5 and figure C1 in appendix C).[5]

Group differences among students scoring in the upper third on the grade 8 state standardized math achievement test. Among students who scored in the upper third on their state's grade 8 math achievement test, there were no statistically significant differences between those in Ramp-Up schools and those in comparison schools in likelihood of completing the FAFSA (odds ratio = 1.4, $p = .208$), scores on the ACT Engage goal striving scale (Hedges's $g = 0.06$, $p = .853$), scores on the ACT Engage commitment to college scale (Hedges's $g = -0.16$; $p = .647$), or likelihood of submitting at least one college application (odds ratio = 1.19, $p = .799$).

Group differences among students scoring in the middle third on the grade 8 state standardized math test. For students who scored in the middle third on their state's grade

8 math achievement test, there were no statistically significant differences between those in Ramp-Up schools and those in comparison schools in likelihood of completing the FAFSA (odds ratio = 1.2, p = .414), scores on the ACT Engage goal striving scale (Hedges's g = 0.01, p = .529), scores on the ACT Engage commitment to college scale (Hedges's g = –0.09, p = .285), or likelihood of submitting at least one college application (odds ratio = 1.66, p = .308).

Group differences among students eligible for the federal school lunch program. For students who were eligible for the federal school lunch program, there were no statistically significant differences between those in Ramp-Up schools and those in comparison schools in likelihood of completing the FAFSA (odds ratio = 1.4, p = .365), scores on the ACT Engage goal striving scale (Hedges's g = –0.13, p = .844), scores on the ACT Engage commitment to college scale (Hedges's g = –0.18, p = 0.708), or likelihood of submitting at least one college application (odds ratio = 1.11, p = .821).

For students who were eligible for the federal school lunch program, there were no statistically significant differences between those in Ramp-Up schools and those in comparison schools in likelihood of completing the FAFSA, scores on the ACT Engage goal striving scale, scores on the ACT Engage commitment to college scale, or likelihood of submitting at least one college application

Ramp-Up schools and comparison schools offered the same supplemental college-readiness supports, but staff in Ramp-Up schools showed more college-focused activity than did staff in comparison schools

To demonstrate an impact, the Ramp-Up program would have to add college-readiness supports that were not already available in schools. The study team therefore examined whether college-readiness programming in Ramp-Up schools differed from that in the comparison schools.

Basic college-readiness supports. Staff survey data collected in the fall of the 2014/15 school year showed that Ramp-Up schools and comparison schools offered students similar supplemental college-readiness supports (for example, assistance with identifying colleges that match students' interests and abilities and providing classes and workshops to prepare students for college entrance exams). The two groups of schools also showed similar rates of tracking students' completion of key college enrollment actions (for example, college applications and college entrance exams; table 1).

Students receiving assistance with enrollment actions. While staff in both groups of schools reported offering students assistance with college enrollment actions, a higher percentage of students received such assistance in Ramp-Up schools than in comparison schools (figure 3). Staff reported that a significantly higher percentage of students in Ramp-Up schools than of students in comparison schools received support filling out financial aid forms (p = .009), identifying scholarship opportunities (p = .033), and completing scholarship applications (p < .022). A higher percentage of students in Ramp-Up schools may also have received assistance with completing college applications and planning how to pay for college, but the average differences between the two groups of schools were not statistically significant (p = .051 for completing college applications and p = .06 for planning how to pay for college).

Engagement in college-oriented activity among staff. Survey data collected from staff and students indicate that staff in Ramp-Up schools were more likely than staff in comparison schools to engage in college-oriented activities in four domains: curriculum and technology, professional development, college-focused staff–student interactions, and postsecondary planning. Specifically, staff in Ramp-Up schools tended to provide more advanced course offerings and invest in technological platforms that track students' progress toward

Table 1. Staff in Ramp-Up schools and comparison schools reported offering the same basic college-readiness supports, fall 2014 (percent of staff member respondents)

Types of support	Ramp-Up schools	Comparison schools
Holding or participating in college fairs	100	100
Consulting with college representatives	96	100
Encouraging students to visit colleges	100	100
Organizing college visits	100	96
Offering programs that help students plan or prepare for college (such as Upward Bound, Advancement Via Individual Determination, and College Possible)	96	100
Information sessions on searching for and applying to college	92	100
Information sessions on paying for college	88	96
Does school assist students with		
Identifying colleges that match students' interests and abilities?	100	100
Completing or reviewing college applications?	100	100
Completing or reviewing the Free Application for Federal Student Aid?	100	96
Identifying scholarship opportunities?	100	100
Completing or reviewing scholarship applications?	100	96
Classes or workshops to prepare for college admissions exams?	100	92
Does school track students' completion of		
College applications?	61	58
Free Application for Federal Student Aid?	62	45
Scholarship applications?	60	69
Completion of college admissions exam?	60	64

Note: The sample consisted of 635 staff members from 25 Ramp-Up schools and 570 staff members from 24 comparison schools. There were no statistically significant differences in any of these college-readiness supports between the two groups of schools.

Source: Authors' analysis of staff survey data from fall 2014.

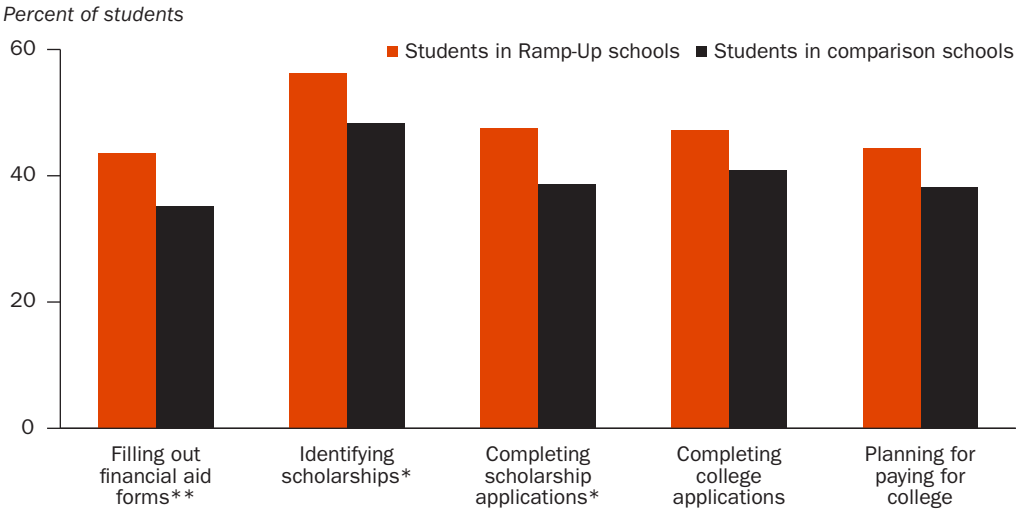
Staff reported that a significantly higher percentage of students in Ramp-Up schools than of students in comparison schools received support filling out financial aid forms, identifying scholarship opportunities, and completing scholarship applications

postsecondary goals, participate in professional development related to college readiness, emphasize college readiness in their interactions with students, and use college planning tools ($p < .05$; figure 4). Furthermore, according to student survey respondents, staff in Ramp-Up schools showed greater emphasis on two of the five dimensions of college readiness (admissions readiness and financial readiness) than did staff at comparison schools. Students' observations of staff emphasis on academic readiness, career readiness, and personal–social readiness did not differ between the two groups of schools (figure 5).

Despite school staff members' enhanced engagement in college-oriented activities in Ramp-Up schools, implementation of Ramp-Up components after the first year was inadequate for many schools

Schools' average implementation scores across all components indicate that 24 of 25 Ramp-Up schools (96 percent) had average implementation scores in the adequate range (figure 6; see also table C6 in appendix C). However, 3 of the 25 implementing schools (12 percent) adequately implemented all five Ramp-Up components. The components most often found lacking in this study were the same as those found lacking in the Ramp-Up implementation study (Lindsay et al., 2016), specifically curriculum content and postsecondary planning tools.

Figure 3. According to staff responses, the percentage of students who received assistance with key enrollment actions was higher in Ramp-Up schools than in comparison schools, fall 2014

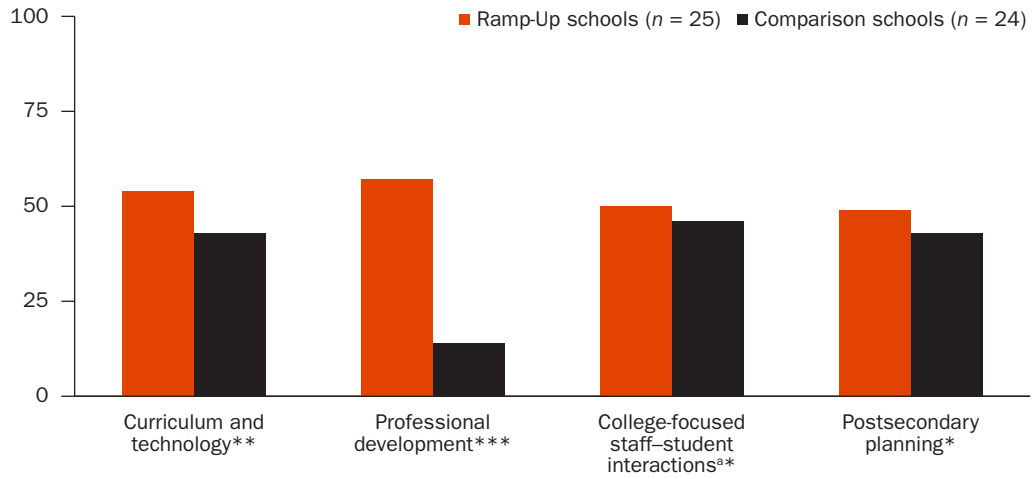


* Group differences were statistically significant at $p < .05$; ** group differences were statistically significant at $p < .01$.

Note: The sample consisted of 287 staff members from 24 Ramp-Up schools and 232 staff members from 23 comparison schools. Percentages are from the midpoint value in each response category, averaged across staff respondents within schools and then across schools for each group.

Source: Authors' analysis of staff survey data from fall 2014.

Figure 4. Staff in Ramp-Up schools were more likely than staff in comparison schools to engage in college-oriented activities, 2014/15

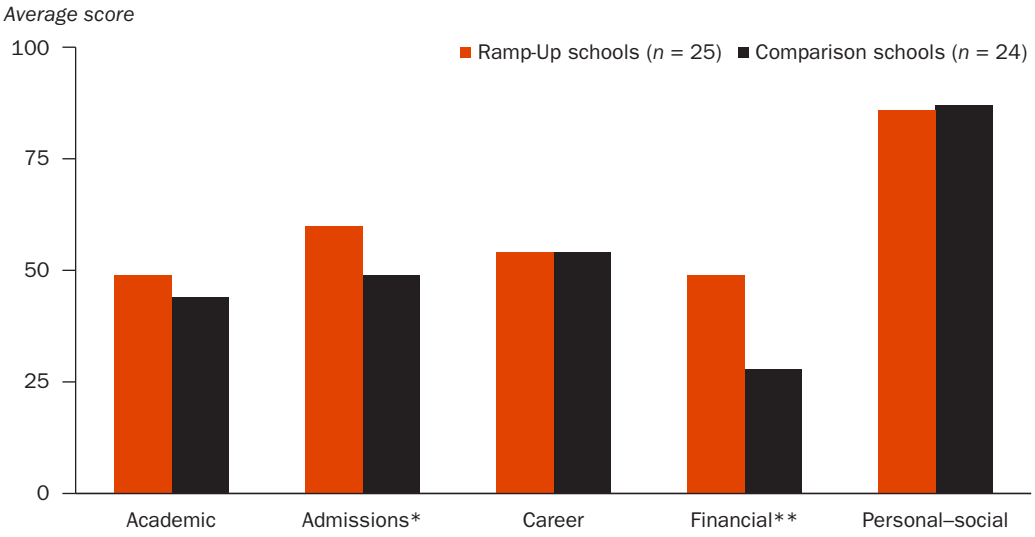


* Difference is significant at $p < .05$; ** difference is significant at $p < .01$; *** difference is significant at $p < .001$.

Note: Percentages are based on responses from the student (5,913 in fall 2014 and 5,157 in spring 2015) and staff surveys (1,199 in fall 2014). Percentages were averaged across respondents within schools and then across schools for each group.

Source: Authors' analysis of staff survey data from fall 2014, extant documents and data, and student survey data from fall 2014 and spring 2015.

Figure 5. Students in Ramp-Up schools observed significantly more staff support for two of the five dimensions of college readiness than did students in comparison schools, 2014/15

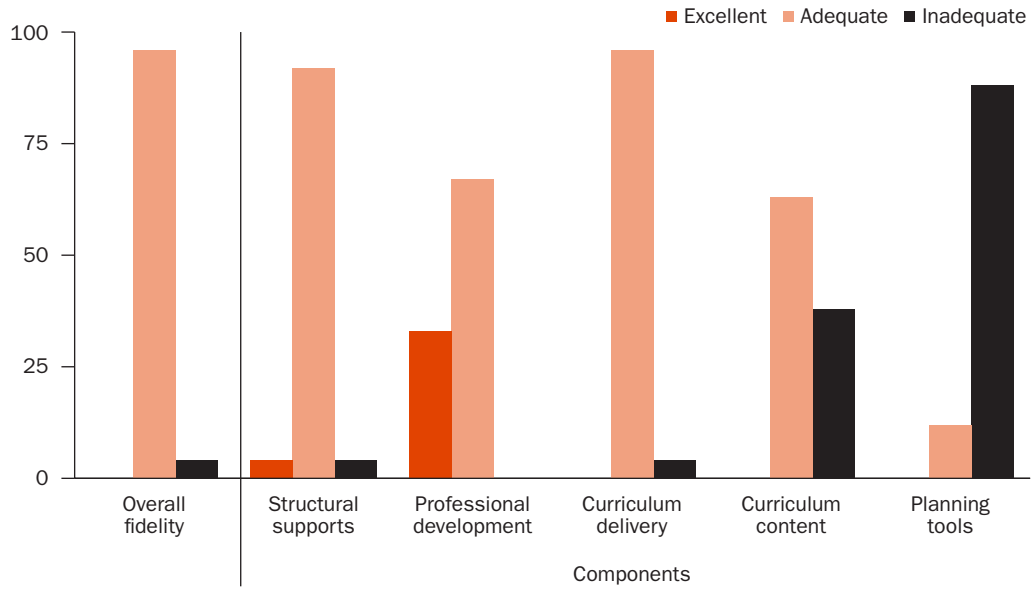


* Significantly different at $p < .05$; ** significantly different at $p < .01$.

Note: Based on responses from 5,913 students in fall 2014 and 5,157 students in spring 2015.

Source: Authors' analysis of student survey data from fall 2014 and spring 2015.

Figure 6. For Ramp-Up schools, overall implementation was excellent or adequate, but implementation for some schools on some components was inadequate, 2014/15



Note: Cutpoints for excellent, adequate, and inadequate implementation were set by the program developer.

Source: Authors' analyses of staff survey data, student survey data, and instructional log data from spring 2014.

Structural supports. One of the 25 Ramp-Up schools (4 percent) demonstrated excellent implementation, and 23 (92 percent) adequately established the structural supports needed for Ramp-Up to be successful (see figure B2 in appendix B for a list of structural supports). One school (4 percent) did not adequately develop the structural supports.

Professional development. Of the 24 Ramp-Up schools with available data, 8 (32 percent) had professional development implementation scores in the excellent fidelity range, while the remaining 16 schools (64 percent) had scores in the adequate fidelity range.

Curriculum delivery. All but one Ramp-Up school (96 percent) adequately delivered the Ramp-Up content. That is, the Ramp-Up advisors conducted most advisory sessions and workshops and had adequate access to Ramp-Up materials and resources. The remaining school inadequately delivered the curriculum to students.

Curriculum content. Sixty-three percent of Ramp-Up schools conveyed the curriculum content—that is, content related to the five pillars of college readiness—at adequate levels. Thirty-seven percent of schools inadequately implemented this component.

Postsecondary planning tools. The Ramp-Up component that the vast majority of schools failed to implement adequately was the development and use of college and career planning tools. Only 12 percent of Ramp-Up schools implemented this component adequately, while the other 88 percent of schools inadequately implemented it. As in the Ramp-Up implementation study (Lindsay, et. al, 2016), the current study's implementation scores on the postsecondary planning tools subcomponents showed that no schools were using plans as a means of keeping parents up-to-date on students' progress toward college (see table C6 in appendix C).

Implications of the study findings

Ramp-Up to Readiness is a schoolwide approach that aims to help middle and high schools improve students' chances of college enrollment and success. The findings from this study may offer school district leaders, staff, and policymakers insight on the impacts they can expect after a single year of implementation for students in grades 10–12, how Ramp-Up complements other college-readiness approaches, and how well schools implemented Ramp-Up in the first year.

This study suggests that Ramp-Up schools are unlikely to see immediate substantial impacts on student outcomes, such as FAFSA completion and ACT Engage goal setting and commitment to college scale scores, within a single year of implementation

This study suggests that Ramp-Up schools are unlikely to see immediate substantial impacts on student outcomes, such as FAFSA completion and ACT Engage goal setting and commitment to college scale scores, within a single year of implementation. Despite the belief of the University of Minnesota's College Readiness Consortium, which developed Ramp-Up, that the program would produce positive changes on these outcomes during the initial year, a single year may not be sufficient time for schools to fully implement the program, and students may need to be exposed to more than a year of advisories and workshops for substantial impacts to occur. Exploratory findings also indicate that grade 12 students in Ramp-Up schools were no more likely than students in comparison schools to submit at least one college application during the initial year of Ramp-Up implementation. The lack of difference may suggest that students require more than six to nine months of exposure to Ramp-Up activities for the impacts to occur. In addition, as described above, Ramp-Up schools may not have seen impacts on immediate outcomes

because of inadequate implementation of all core components or a lack of treatment contrast (that is, since the schools all volunteered to participate in the study, comparison schools may already be placing additional emphasis on students' academic readiness, career readiness, and personal–social readiness).

This study found that Ramp-Up and comparison schools offer similar types of supplemental college-readiness supports for students who self-identify as college bound. According to the consortium, a distinctive feature of Ramp-Up is its schoolwide approach, but given the evidence, it is unclear whether this feature is being actualized. For example, although more students in Ramp-Up schools than in comparison schools report receiving assistance with college enrollment actions, 49–59 percent of staff in schools in each group who responded to the fall staff survey were unable to estimate the percentage of students who received such assistance.

Staff in Ramp-Up schools indicated that they engaged in more college-oriented activities than did staff in comparison schools (see figure 4), but the additional engagement did not translate into differences on all five dimensions of college readiness between the two groups of schools. Statistically significant differences between students in Ramp-Up schools and students in comparison schools were found for only two of the five dimensions (admissions readiness and financial readiness; see figure 5). The lack of statistically significant differences on the other three dimensions—academic readiness, career readiness, and personal–social readiness—may be due to several features of the Ramp-Up implementation. First, there was inadequate implementation of all core components. Second, there may have been a lack of program maturity in schools. It may take more than a single year to work out the implementation challenges. Third, there may have been a lack of program exposure among students. Students were exposed to only one year of Ramp-Up programming at most, whereas when fully implemented, they would have been exposed to it from grade 6. Finally, there may have been a lack of treatment contrast; comparison schools may also be placing additional emphasis on students' academic readiness, career readiness, and personal–social readiness. Studies that examine Ramp-Up impacts after several years of implementation would likely provide a clearer picture of whether Ramp-Up activities are capable of producing the intended outcomes.

For schools serving students in grades 10–12, implementation of Ramp-Up required making structural changes, supporting professional development for staff involved with Ramp-Up, establishing the process for conveying the Ramp-Up curriculum (establishing weekly advisory sessions and the five workshops), ensuring that all five dimensions of college readiness were conveyed through the advisory and workshop sessions, and establishing a college and career planning process. The findings indicate that some Ramp-Up schools fell short of adequate implementation of some core components (see figure 6). One possible implication of this finding is that the consortium might provide schools with more guidance on implementing particular components, including curriculum content and postsecondary planning tools. Schools implementing the program may need to ensure that advisories and workshops cover all five dimensions of college readiness, that students and Ramp-Up advisors use postsecondary planning tools, and that parents are informed about students' progress on actualizing their career plans.

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Limitations of the study

Several limitations should be kept in mind when interpreting the study findings. These limitations involve the size and integrity of the analytic samples, the outcome measures, inferences that can be drawn after a single year of program implementation, and the generalizability of the findings.

Size and integrity of the analytic samples

The samples were problematic in two ways: the number of students per school was smaller than expected, leading to reduced ability to detect smaller effects, and for some outcomes the student-level response rates and attrition rates differed between Ramp-Up schools and comparison schools.

Given the recruitment of schools with fewer students, lower than expected response rates, and higher than expected attrition rates, the study could detect only larger effects —15 percentage points for binary outcomes and 0.19 standard deviation for continuous outcomes—with adequate power

The first problem involves the power of the statistical comparisons between groups—that is, whether the study included enough schools and students to detect the small effects that are often seen in studies using postsecondary outcomes. This impact study was originally designed to detect effects as small as 5 percentage points for binary outcomes and 0.17 standard deviation unit for continuous outcomes. However, given the recruitment of schools with fewer students, lower than expected response rates, and higher than expected attrition rates, the study could detect only larger effects—15 percentage points for binary outcomes and 0.19 standard deviation for continuous outcomes—with adequate power (see tables B6 and B7 in appendix B for information on attrition and minimum detectable effect sizes). For example, the power analysis for the actual sample sizes suggests that impacts greater than 19 percentage points on FAFSA completion would be detectable with 95 percent confidence; however, the estimated impact was 4 percentage points, which did not meet the threshold.

Response rates for fall and spring staff surveys were 50–70 percent, which some methodologists would consider barely acceptable (Mangione & Van Ness, 2009). Typically, such response rates would indicate that the findings based on these surveys (in this case, the findings on implementation fidelity and treatment contrasts) should be viewed with caution. However, the findings from completed staff surveys were consistent with those in the previous Ramp-Up study on implementation (Lindsay, et al., 2016).

In some cases, differential response and attrition rates at the school and student levels may lead to skepticism over whether impact estimates can be attributed solely to Ramp-Up (see table B6 in appendix B). Differential response and attrition rates may mean that the intervention caused some potential respondents to leave the school or to not complete the outcome measures; the data would therefore fail to reflect their thoughts, feelings, or actions. Impact estimates for the following subgroup contrasts should be interpreted with caution because the samples did not meet What Works Clearinghouse standards for acceptable attrition:

- For students in the upper third of the distribution on the grade 8 state standardized math test: Ramp-Up impact estimates of submission of at least one college application.
- For students in the middle third of the distribution on the grade 8 state standardized math test: Ramp-Up impact estimates for FAFSA completion and scores on the ACT Engage goal striving and commitment to college scales.

- For students eligible for the federal school lunch program: Ramp-Up impact estimates for FAFSA completion and submission of at least one college application.

For the entire sample, attrition was high on the ACT Engage goal striving and commitment to college outcome measures as well (see table B6 in appendix B). However, the analytic samples from Ramp-Up and comparison schools showed baseline differences that were within the acceptable range used by the What Works Clearinghouse (Hedges's g = –0.13 for goal striving and Hedges's g = –0.16 for commitment to college).

The outcome measures

The study used students' self-reports to measure whether they completed the FAFSA and submitted at least one college application because data could not be obtained from government agency databases, such as Minnesota's state longitudinal data system or the National Student Clearinghouse, because of privacy concerns. Participating schools did not adequately track students' transcript requests for college applications. Thus, these outcomes may have been influenced by student biases. The extent of this bias for students in Ramp-Up schools and comparison schools is unknown.

Findings from this study may not generalize to other types of students or other types of student populations

Inferences that can be drawn after a single year of program implementation

As noted in the Ramp-Up implementation (Lindsay, et. al, 2016), more than a single year may be needed to secure staff buy-in to the program. Staff too may need time to become more familiar with the curriculum and its delivery to carry out their advisor role with fidelity. Students may need multiple years of exposure to Ramp-Up's curriculum to show impacts on immediate, intermediate, and long-term outcomes. This would be especially true for two of the key outcomes: FAFSA completion and submission of at least one college application. Future studies could benefit from examining the impacts of Ramp-Up following multiple years of implementation and student exposure to the curriculum.

Generalizability of the findings

Finally, findings from this study may not generalize to other types of students or other types of student populations. This study was conducted in high schools in Minnesota and western Wisconsin that volunteered to participate. The schools and student populations that participated in the study may differ from those in other areas of the United States; thus similar studies of Ramp-Up in other settings could yield different findings.

Appendix A. Ramp-up program history

This appendix provides a detailed description of the history of the Ramp-Up to Readiness program (Ramp-Up), including a timeline of its implementation. The appendix also includes information on how Ramp-Up is implemented in schools and the activities that compose the program.

Program history and timeline

Since 2010 the University of Minnesota's College Readiness Consortium has implemented and tested Ramp-Up in 95 schools located throughout Minnesota and in 2 schools in western Wisconsin. The timeline of the program's development is below:

2007–09	The consortium convened an advisory group of researchers, guidance counselors, school administrators, and higher education administrators to develop a program to increase the number and diversity of students who graduate high school ready to succeed in postsecondary settings. They identified the five dimensions of college readiness from research literature, which became the foundation of Ramp-Up.
2009–10	The consortium partnered with Minnesota's Center for Applied Research on Educational Improvement to create activities, curriculum, an implementation timeline, student planning tools, resources, and a technology platform. The advisory group offered refinements to these elements.
2010–12	Ramp-Up was piloted in 11 secondary schools during the 2010/11 school year. Curriculum and planning tools were refined based on implementation experience.
2012/13 school year	Ramp-Up was piloted again in 41 secondary schools in Minnesota. Feedback from school implementation teams helped further refine Ramp-Up implementation process, resources, and activities.
2013/14 school year	Regional Educational Laboratory (REL) Midwest examined implementation of Ramp-Up in a sample of 20 schools, 10 of which implemented Ramp-Up immediately (2013/14) and 10 of which delayed implementation by one year.
2014/15 school year	REL Midwest studied immediate impacts with a new sample of 49 schools (47 in Minnesota and 2 in western Wisconsin). Schools were randomly assigned to implement Ramp-Up immediately (2014/15) or delay implementation for one year (2015/16).

Program resources and activities

Ramp-Up focuses on students in grades 6–12 (this study looked at grades 10–12). Schools adopting Ramp-Up teach a set of 28–30 minute lessons (called group advisory sessions) to groups of students (the size of which varies by school) at each grade level once a week and five class period–long workshops throughout the year. Each of the 28 lessons occurs during students' homeroom periods and is typically led by homeroom teachers (referred to as Ramp-Up advisors). Topics covered in the curriculum address one or more of the five dimensions of college readiness. The five workshops cover new content related to one of the five dimensions of readiness and involve more student–advisor interaction. Ramp-Up advisors receive detailed plans for group advisory sessions and workshops, along with a general description of the curriculum in a grade-specific advisor guide. Ramp-Up coordinators also provide the advisors with implementation support and supplemental materials to share with students.

The Ramp-Up lessons and workshops connect to elements in students' postsecondary plans and their readiness rubric. In their postsecondary plan—which is completed early

in the sequence of advisory sessions—students describe their college and careers of interest, their planned coursework each year, and their extracurricular activities. Students use the readiness rubric to measure their progress on their plans. Students update the postsecondary plan once a year and update the readiness rubric three times a year. These tools are also shared with parents.

To guide implementation, Ramp-Up schools assemble a leadership team consisting of an administrator, a teacher, and a school counselor and appoint a Ramp-Up coordinator to oversee implementation. Staff members in Ramp-Up high schools learn how to implement the program by participating in the following professional development activities:

- A full-day planning session facilitated by the consortium for the Ramp-Up leadership teams from each school prior to the beginning of the school year.
- A half-day training session facilitated by the consortium for the Ramp-Up coordinators from each school prior to the beginning of the school year.
- A four-hour training session for school staff in each Ramp-Up school, facilitated by the school's Ramp-Up leadership team and coordinator at the beginning of the school year, to introduce the Ramp-Up program, curriculum, and key college-readiness information.
- A monthly 20-minute training session at a faculty meeting to preview specific Ramp-Up activities, which Ramp-Up advisors will lead throughout the month.

The program developer provides materials, slides, and specific guidelines for schools to use during the school-led professional development activities.

Appendix B. Methods

This appendix details the methods used in the study, including how schools were selected to participate, types of data used, how data were coded and cleaned, and what analytic methods were used to address each research question.

Selecting schools to participate

The University of Minnesota's College Readiness Consortium conducted information sessions about Ramp-Up to Readiness™ (Ramp-Up) throughout Minnesota and in western sections of Wisconsin during the 2013/14 school year. At the end of these presentations, schools were invited to complete an application to implement the Ramp-Up program without cost. The 50 schools that applied were randomly assigned to conditions through a two-step process. First, schools were placed into one of seven groupings—or random assignment blocks—based on state, district, and rank of their index score (which consisted of the sum of the percentage of students eligible for the federal school lunch program and the percentage of students who scored proficient in math during the 2013/14 school year). Second, half of the schools in each block were randomly selected to implement Ramp-Up during the 2014/15 school year (Ramp-Up schools), and the other half were randomly selected to delay implementing Ramp-Up until following year (comparison schools; figure B1). Regional Educational Laboratory (REL) Midwest paid $1,500 to each comparison school as compensation for delaying implementation of Ramp-Up and assisting with data collection. One comparison school was unable to provide the necessary data and was ultimately dropped from the study.

A total of 25 Ramp-Up schools and 24 comparison schools were included in the analysis. Extant data were collected on 15,314 students: 7,574 students in Ramp-Up schools and 7,740 students in comparison schools (table B1). For Ramp-Up schools the average number of students in grades 10–12 was 687, with a range from approximately 50 to 1,400. For comparison schools the average number of students in grades 10–12 was 544, with a range from approximately 45 to 1,600.[6]

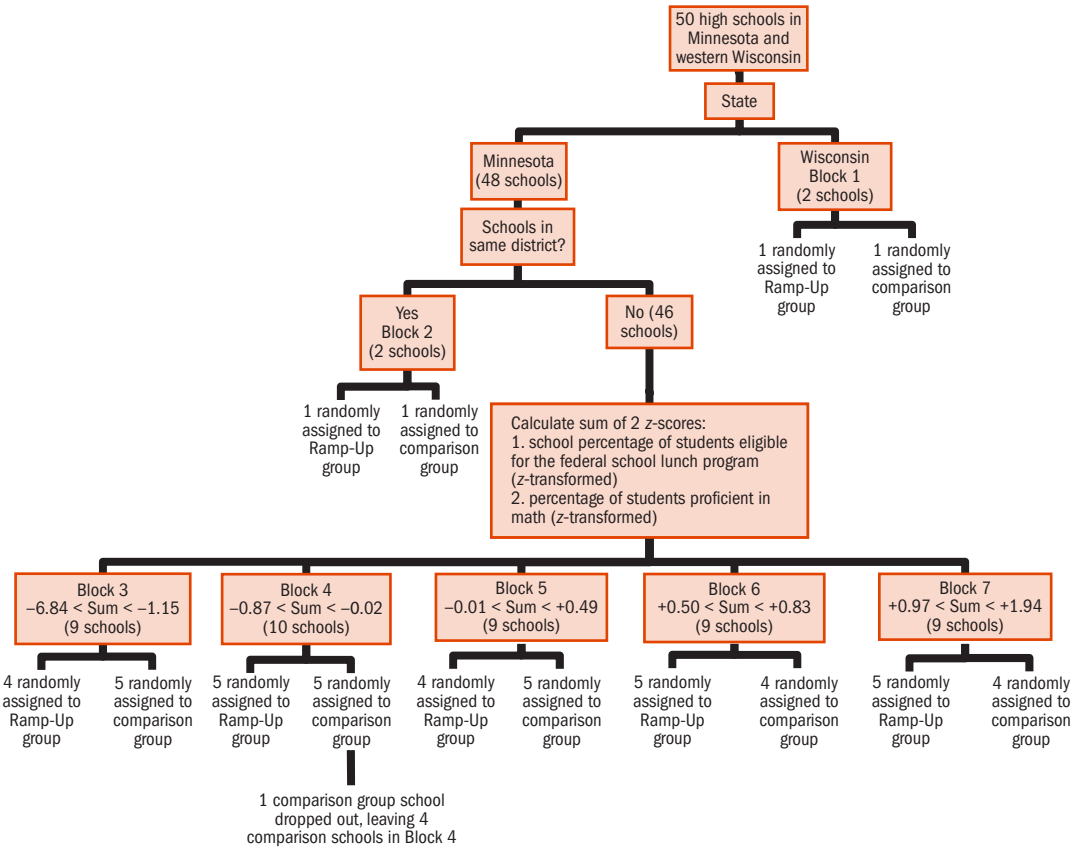
Description of data

To address the research questions underlying this study, the study team collected different types of quantitative and qualitative data (table B2).

Extant data. The following student-level records were requested from the 49 schools participating in the study:

- *Grade level.* This study used data for students in grades 10–12 during the 2014/15 school year. Students with missing data for grade level were excluded from the study.
- *Demographic characteristics.* Measures included race/ethnicity, gender, eligibility for the federal school lunch program (a proxy for economic disadvantage), having an Individualized Education Program, and being an English learner student. The study team assigned students with missing race/ethnicity data to the modal category of White (82 percent of students in the sample with data were White). Students with missing gender data were randomly assigned to be either male or female. When students were missing data on eligibility for the federal school lunch program, the

Figure B1. Process used to randomly assign schools to conditions



Source: Authors' calculations.

Table B1. Number of students in grades 10–12 and total sample size by treatment condition, fall 2014

Treatment condition	Grade 10	Grade 11	Grade 12	Total
Ramp-Up schools	2,536	2,555	2,483	7,574
Comparison schools	2,679	2,493	2,568	7,740
Total	5,215	5,048	5,051	15,314

Source: Authors' calculations based on data obtained from participating schools.

study team imputed the percentage of students in their school who qualified for the school lunch program. Finally, when students were missing data on having an Individualized Education Program or being an English learner student, the study team assumed it was because they did not meet the criteria for either status and assigned a 0 for each.[7] Whenever missing data were imputed, the study team created indicator variables to specify which students had missing data on particular variables.

- *Test scores on state accountability assessments.* Students in Minnesota are required to take the Minnesota Comprehensive Assessment series II (MCA-II) in grades 3–8. Grade 8 MCA-II math, reading, and science scores were collected for students in the sample (those in grades 10–12 in the 2014/15 school year). The study team chose to use students' MCA-II math scores as covariates in the analyses. It first converted MCA-II math scores to z scores and then imputed a 0 (the mean)

Table B2. Data used to address each research question

Research questions	Data sources
Confirmatory research questions	
What is the impact of Ramp-Up on the likelihood of grade 12 students completing the Free Application for Federal Student Aid (FAFSA)?	• Student-level extant data from schools • School-level extant data from schools • Minnesota Department of Education data • U.S. Department of Education financial aid data • Wisconsin Department of Public Instruction data • Student survey data
What is the impact of Ramp-Up on grade 10, 11, and 12 students' scores on the ACT Engage goal striving and commitment to college scales?	• Student-level extant data from schools • School-level extant data from schools • Minnesota Department of Education data • Wisconsin Department of Public Instruction data • ACT Engage survey data
Exploratory research questions	
What is the impact of Ramp-Up on the likelihood of a student in grade 12 submitting at least one college application?	• Student-level extant data from schools • School-level extant data from schools • Minnesota Department of Education data • Wisconsin Department of Public Instruction data • Student survey data
What is the impact of Ramp-Up on the likelihood of completing the FAFSA, ACT Engage goal striving and college commitment scale scores, and the likelihood of submitting at least one college application for students who scored in the upper third on the grade 8 state standardized test, students who scored in the middle third on the grade 8 state standardized test, and students who are eligible for the federal school lunch program?	• Student-level extant data from schools • School-level extant data from schools • Minnesota Department of Education data • Wisconsin Department of Public Instruction data • U.S. Department of Education financial aid data • ACT Engage survey data • Student survey data
Implementation research questions	
Are there differences in the number or types of supplemental college-readiness supports (that is, programs or services) between Ramp-Up schools and comparison schools?	• Student-level extant data • Staff survey data • Student survey data
Are there differences between Ramp-Up schools and comparison schools in staff engagement in college-oriented activities (adoption of curriculum and technology, professional development, college-focused student interactions, and postsecondary planning)?	• Student-level extant data • Staff survey data • Student survey data
To what extent did schools implement the core components of Ramp-Up (structural supports, professional development, curriculum delivery, curriculum content, and postsecondary planning tools) as intended by the program developer?	• Implementation data from program developer • Staff survey data • Student survey data • Staff instructional log data

Source: Authors' study plan.

for all missing scores. Finally, the study team created an indicator variable to specify which students were missing MCA-II math scores. The same process was used with Wisconsin students' grade 8 math scores on the Wisconsin Concepts and Knowledge Examination.

- *High school grade point average*. Cumulative high school unweighted grade point average as of the fall of the 2014/15 school year was collected for all students in the study. When students were missing values for grade point average, the study team imputed the sample mean and created an indicator variable to specify which

students were missing data on grade point average. In addition, some schools submitted weighted grade point averages. Because the study team did not have sufficient information to be able to convert weighted grade point averages into unweighted grade point averages, a ceiling was imposed at 4.0.

- *Minnesota Automated Reporting Student System number and Wisconsin Student Number.* Schools provided the unique identification number assigned to each student by their state, and these numbers were used to connect student-level extant data to student survey data. In several cases, schools did not use the state identification numbers as unique identifiers for students. The study team asked those schools to create their own unique identifier for each student and keep a crosswalk that could link students' identifiers with their identities.

The following school-level extant data were collected from schools:

- *Number of students in grades 10, 11, and 12 in 2013/14.* Schools provided data on the number of students in grades 10, 11, and 12 during the 2013/14 school year. These data were used as the denominator when calculating the percentage of students who completed the Free Application for Federal Student Aid (FAFSA) in 2013/14.

The following school-level extant data were obtained from publicly available data files maintained by the Minnesota Department of Education and the Wisconsin Department of Public Instruction:

- *Number of students in grades 10, 11, and 12 in 2013/14.* If schools did not report the number of students in grades 10, 11, and 12 during the 2013/14 school year, the study team obtained these data from data files maintained by the Minnesota Department of Education and Wisconsin Department of Public Instruction.
- *Percentage of students eligible for the federal school lunch program.* For students missing data on eligibility for the federal school lunch program, the study team imputed the percentage of students in their school who were eligible.

The following school-level extant data were collected from the U.S. Department of Education's Federal Student Aid website (https://studentaid.ed.gov/sa/about/data-center/student/application-volume/fafsa-completion-high-school), which publishes data on FAFSA completion by high school:

- *Number of grade 12 students who completed the FAFSA in 2013/14 by high school.* Only high schools with five or more students who completed the FAFSA are included in the database. For the high schools that were included, the study team calculated the percentage of students in each school who completed the FAFSA in 2013/14 by dividing the number of FAFSAs submitted in 2013/14 by the number of grade 12 students in 2013/14.

Student survey. In fall 2014 and spring 2015, information from students in Ramp-Up schools and comparison schools was gathered using a survey. A random sample of 30 grade 10 students per school, a random sample of 30 grade 11 students per school, and all 5,051 grade 12 students were selected to take the online survey.[8] The 10–15 minute survey was designed to help the study team better understand schools' fidelity of implementation and the contrast between the college-readiness supports in schools implementing Ramp-Up and the comparison schools. The spring survey also asked grade 12 students about FAFSA completion and college applications. Students were asked "Have you submitted the Free Application for Federal Student Aid (FAFSA) so far this school year?" Four response

options ("Yes," "No, but I plan to submit the FAFSA by the end of the summer, "No, I do not plan to submit the FAFSA," and "I don't know") were recoded into a dichotomous variable in which 0 represents not having submitted the FAFSA yet or not knowing and 1 represents having completed the FAFSA. In addition, students were asked "How many college applications, if any, have you submitted so far this school year?" Five response options (none, one, two or three, four or five, and more than five) were recoded into a dichotomous variable in which 0 represents having submitted no college applications and 1 represents having submitted at least one college application.

Overall, 78 percent of students completed the fall survey (5,913 of 7,541 eligible students) and 68 percent of students completed the spring survey (5,517 of 7,558 eligible students). In Ramp-Up schools, 86 percent of students completed the fall survey (3,019 of 3,516 eligible students), and 79 percent of students completed the spring survey (2,743 of 3,494 eligible students). In comparison schools, 72 percent of students completed the fall survey (2,894 of 4,025 eligible students), and 59 percent of students completed the spring survey (2,414 of 4,064 eligible students). The average school-level response rate for Ramp-Up schools was 83 percent for the fall survey and 74 percent for the spring survey. The average school-level response rate for comparison schools was 84 percent for the fall survey and 64 percent for the spring survey (table B3).

ACT Engage survey. In fall 2014 and spring 2015, students in Ramp-Up schools and comparison schools completed the ACT Engage survey for grades 10–12. The study team requested that the same 30 randomly selected grade 10 and grade 11 students from each school invited to complete the student survey also complete the ACT Engage survey, and the study team randomly selected 30 grade 12 students from each school to complete the ACT Engage survey as well.[9] A total of 4,317 students were randomly selected to complete the ACT Engage survey.[10]

Overall, 79 percent of eligible students (3,406) completed the ACT Engage survey in the fall, and 62 percent (2,691) completed it again in the spring. In Ramp-Up schools,

Table B3. Student survey and ACT Engage survey response rates for fall 2014 and spring 2015, by treatment condition

Survey time and treatment condition	Student survey			ACT Engage survey		
	Number of respondents	Percentage of eligible respondents who completed the survey	Average school-level response rate (percent)	Number of respondents	Percentage of eligible respondents who completed the survey	Average school-level response rate (percent)
Fall 2014						
Ramp-Up	3,019	86	83	1,606	76	77
Comparison	2,894	72	84	1,800	81	82
Total	5,913	78	84	3,406	79	80
Spring 2015						
Ramp-Up	2,743	79	74	1,327	63	63
Comparison	2,414	59	64	1,364	61	61
Total	5,157	68	69	2,691	62	62

Note: Based on responses from students in 25 Ramp-Up schools and 24 comparison schools that administered the student survey and the ACT Engage survey.

Source: Authors' calculations based on response counts from the student survey and ACT Engage survey.

76 percent of students completed the survey in the fall (1,606 of 2,105 eligible students), and 63 percent of students completed it in the spring (1,327 of 2,105 eligible students). In comparison schools, 81 percent of students completed the survey in the fall (1,800 of 2,212 eligible students), and 61 percent of students completed it in the spring (1,364 of 2,212 eligible students). The average school-level response rate for Ramp-Up schools was 77 percent for the fall survey and 63 percent for the spring survey. The average school-level response rate for comparison schools was 82 percent for the fall survey and 61 percent for the spring survey (see table B3).

This sample size corresponds to a minimal detectable effect size of less than 0.10 in an analysis of the relationship between the ACT Engage scale scores and measures of implementation fidelity. The ACT Engage survey is an online questionnaire that measures student factors associated with academic success, such as students' motivation and skills, their social engagement, and their self-regulation. The grade 10–12 version of ACT Engage has 108 items and 10 scales in three domains and requires 15–20 minutes to complete. Analysis for this study focused on 2 of the 10 scales—goal striving and commitment to college—which the program developer considers measures of personal college readiness.[11]

The goal striving scale consists of 10 items that measure the "strength of [a student's] efforts to achieve [his or her] objectives and end goals" (ACT, 2012, p. 2). ACT does not publish all items on the ACT Engage survey but does provide sample items for each scale. Sample items in this scale include "Once I set a goal, I do my best to achieve it" and "I bounce back after facing disappointment or failure" (ACT, 2012, p. 34). ACT states that this scale has good internal consistency reliability (alpha = .87).

The commitment to college scale has 10 items that measure a student's commitment to enrolling in and completing college. ACT states that this scale has good internal consistency reliability as well (alpha = .89; ACT, 2012). Sample items in this scale include "A college education will help me achieve my goals" and "I am committed to attend and finish college regardless of obstacles" (ACT, 2012, p. 33). Students' scale scores on the two measures show a correlation of r = .60 (ACT, 2012).

There is some predictive validity information available on the two scales as well. For example, the scales have a moderate correlation with high school grade point average (r = .3 for the goal striving scale and r = .4 for the commitment to college scale; ACT, 2012) and with college grade point average (r = .3 for both scales; Peterson, Casillas, & Robbins, 2006). In addition, the commitment to college scale predicts retention in two- and four-year colleges for the first year after institutional characteristics, student demographics, and prior academic achievement are controlled for (Robbins, Allen, Casillas, Peterson, & Le, 2006).[12] Specifically, a one standard deviation increase in commitment to college was associated with a 19 percent increase in the odds of persisting after the first year at a four-year college.

Staff surveys. In fall 2014, all staff at Ramp-Up schools and comparison schools were invited to complete a 20–30 minute online survey. The survey consisted of 26 items that inquired about the respondents' personal beliefs about their role in helping students prepare for and apply to college, the types of college-readiness supports that the school makes available to students, the types of assistance that students receive from school staff, and the respondents' perspectives on students' readiness to succeed in a postsecondary institution. For Ramp-Up schools, the overall response rate was 62 percent (624 of 1,003

eligible staff members), and the average school-level response rate was 64 percent (ranging from 25 percent to 83 percent; table B4). For comparison schools, the overall response rate was 57 percent (575 of 1,009 eligible staff members), and the average school-level response rate was 56 percent (ranging from 0 percent to 91 percent).

In April and May 2015, staff at Ramp-Up schools were asked to complete a second online survey. This 87-item survey asked staff about their perceptions of the strengths and weaknesses of the Ramp-Up program's curriculum, tools, and professional development. It also gathered information about whether school staff implemented the intervention as intended. Surveys were administered to members of schools' Ramp-Up leadership team, the Ramp-Up coordinator, and any teachers in grades 10–12 who had a role in delivering Ramp-Up to students. The surveys included questions with scaled responses, as well as two open-ended questions asking about the strengths and the weaknesses of the Ramp-Up program. Respondents received a $25 gift card to Amazon.com for participating in the survey. The overall response rate was 50 percent (502 of 1,003 eligible staff members), and the average school-level response rate was 55 percent (ranging from 31 percent to 83 percent; see table B4).

Instructional logs. Ramp-Up advisors were invited several times throughout the year to complete instructional logs after each workshop. In four schools, staff did not complete any instructional logs. Overall, 312 logs were completed for 1,808 workshops, for an average school-level response rate of 17 percent. The study team had intended to use the instructional log data to address an implementation-related research question. Because the response rates were so low, the study team opted to drop the research question. However, because instructional logs were completed by three or more Ramp-Up advisors in each school, the information listed about the topics covered and student attendance at workshops was used in the calculation of implementation scores.

Missing extant data. Overall, the rates of missing extant data varied. The missing data rates for demographic variables were lower, while the rates for academic achievement variables were higher. Data were missing from the sample when the variable requested was not submitted by a school (table B5).

Table B4. Staff survey response rates, by treatment condition, 2014/15

Survey time and treatment condition	Staff survey		
	Number of respondents	Percentage of eligible respondents who completed the survey	Average school-level response rate (percent)
Fall 2014			
Ramp-Up	624	62	64
Comparison	575	57	56
Total	1,199	60	60
Spring 2015			
Ramp-Up	502	50	55
Comparison	na	na	na
Total	na	na	na

na is not applicable because staff in comparison schools completed the fall surveys only.

Note: Based on responses from staff in 25 Ramp-Up and 25 comparison schools that administered staff surveys.

Source: Authors' calculations based on response counts from the staff survey.

Table B5. Rates of missing data in the analytic sample for extant variables by treatment condition, 2014/15

Variable	Ramp-Up schools			Comparison schools		
	Number of schools	Number of students	Percentage missing	Number of schools	Number of students	Percentage missing
Gender	25	155	2	24	3	0
Race/ethnicity	25	0	0	23	122	2
Eligibility for the federal school lunch program	24	1,371	18	24	399	5
Individualized Education Program status	25	0	0	24	0	0
English learner status	25	0	0	24	0	0
Grade 8 state standardized math test score[a]	23	2,720	36	22	2,796	36
Cumulative unweighted grade point average (on a scale of 0–4)	24	203	3	23	192	3

Note: The rates of missing data are based on the total number of students in grades 10–12 in Ramp-Up schools (n = 7,740) and comparison schools (n = 7,574).

a. State standardized test refers to the Minnesota Comprehensive Assessment or the Wisconsin Concepts and Knowledge Examination.

Source: Authors' calculations based on data from participating schools.

Approval for data collection

All study materials were reviewed and approved by American Institutes for Research's Institutional Review Board. The study team also applied for and obtained clearance from the Office of Management and Budget to collect the data (OMB NOA 1850–0907). The study team adhered to all local policies and processes for securing consent from parents and school staff members.

Process for coding and cleaning data

Some data had to be converted into analyzable forms to answer questions about program impact and implementation. The process for this conversion, coding, and cleaning is described here.

Extant data. Extant data were used to describe the context for schools participating in the study and to control for baseline student and school characteristics for all impact analyses. Various data-cleaning procedures were conducted, such as checking that data values fell within acceptable ranges, identifying duplicate cases of students, assessing the amount of missing data for individual variables, and examining the distribution of variables. Values that were out of range were declared missing. No duplicate cases of student records were found. In many cases, new variables were calculated based on the provided data (for example, an indicator of enrolling in advanced coursework was calculated based on enrollment in different levels of coursework).

Student survey, staff survey, and instructional log data. Student survey data were used to create four self-reported outcome variables for the impact analyses: FAFSA completion, ACT Engage goal striving scale score, ACT Engage commitment to college scale score, and submitting at least one college application). Student survey data were also used to assess fidelity of implementation and to describe the treatment contrast.

Staff survey responses were recoded such that responses reflected the extent to which the Ramp-Up model was implemented as intended by the program developer. These codes ranged from 0 (not at all indicative of correct implementation of the Ramp-Up model) to 1 (definitely indicative of correct implementation of the Ramp-Up model).

Instructional log data were used in calculation of implementation scores. Specifically, logs provided an indication of whether Ramp-Up advisors were covering the topics that were meant to be covered during the workshops (an indicator of the workshop subcomponent for curriculum delivery component). After the final log was completed in all Ramp-Up schools, the study team averaged the numeric codes across all logs for each teacher. School-level scores on each indicator are the average score of the indicator taken across respondents in that school.

Analytic methods used to address research questions

Following conversion of data into analyzable forms, the study team performed the preliminary analyses, the confirmatory and exploratory analyses, and analysis of program implementation.

Preliminary analyses. Prior to conducting analyses to address the confirmatory, exploratory, and implementation research questions, the study team conducted two preliminary sets of analyses. First, they examined attrition rates in both sets of schools (the percentage of students who were present in the school in October but not in May; table B6). Second,

Table B6. Attrition rates for full samples and subsamples on all outcomes

	School-level attrition			Student-level attrition		
Outcome	Ramp-Up schools	Comparison schools	Difference	Ramp-Up schools	Comparison schools	Difference
Full sample						
Completed Free Application for Federal Student Aid	0.16	0.12	0.04	0	0	0
Submitted at least one college application	0.32	0.24	0.08	0	0	0
ACT Engage goal striving scale score	0.12	0.08	0.04	0.46	0.38	0.08
ACT Engage commitment to college scale score	0.12	0.08	0.04	0.46	0.38	0.08
Scored in the upper third on the grade 8 state standardized math test[a]						
Completed Free Application for Federal Student Aid	0.20	0.24	0.04	0	0	0
Submitted at least one college application	0.44	0.52	0.08	0	0	0
ACT Engage goal striving scale score	0.12	0.12	0	0.35	0.36	0.01
ACT Engage commitment to college scale score	0.12	0.12	0	0.35	0.36	0.01
Scored in the middle third on the grade 8 state standardized math test[a]						
Completed Free Application for Federal Student Aid	0.12	0.24	0.12	0	0	0
Submitted at least one college application	0.44	0.48	0.04	0	0	0
ACT Engage goal striving scale score	0.32	0.16	0.16	0.22	0.27	0.05
ACT Engage commitment to college scale score	0.32	0.16	0.16	0.22	0.27	0.05
Eligible for the federal school lunch program						
Completed Free Application for Federal Student Aid	0.08	0.2	0.12	0	0	0
Submitted at least one college application	0.40	0.28	0.12	0	0	0
ACT Engage goal striving scale score	0.16	0.08	0.08	0.55	0.43	0.12
ACT Engage commitment to college scale score	0.16	0.08	0.08	0.55	0.43	0.12

a. State standardized test refers to the Minnesota Comprehensive Assessment or the Wisconsin Concepts and Knowledge Examination.

Source: Authors' calculations based on extant student data and student surveys from fall 2014 and spring 2015.

they examined the balance between the two groups of schools at baseline, determining whether Ramp-Up schools were equivalent to comparison schools on school-level student academic performance (schoolwide performance on the grade 8 state standardized math test), school size (number of students in grades 10, 11, and 12), and student demographic characteristics (percentage of students eligible for the federal school lunch program, percentage of students who are English learner students, and percentage of students from a racial/ethnic minority group).

Confirmatory and exploratory analyses. Confirmatory analyses assessed the effects of the Ramp-Up program on FAFSA completion and ACT Engage goal striving and commitment to college scale scores (see table B7 for power calculations). Exploratory analyses assessed the effects of the Ramp-Up program on students' submission of college applications. Four intent-to-treat impact models were estimated using a two-level model with students nested within schools. All models assumed a constant treatment effect across blocks (see figure B1

Table B7. Power calculations

Measure	Number of students	Number of schools	Effect size	Minimal detectable effect size
Full sample				
Completed Free Application for Federal Student Aid	2,128	43	7 percentage points	15 percentage points
Submitted at least one college application	1,526	36	6 percentage points	14 percentage points
ACT Engage goal striving scale score	2,039	45	.04	.19
ACT Engage commitment to college scale score	2,039	45	.02	.19
Scored in the upper third on the grade 8 state standardized math test				
Completed Free Application for Federal Student Aid	445	30	4 percentage points	18 percentage points
Submitted at least one college application	297	26	0 percentage points	18 percentage points
ACT Engage goal striving scale score	390	36	.09	.22
ACT Engage commitment to college scale score	390	36	.01	.22
Scored in the middle third on the grade 8 state standardized math test				
Completed Free Application for Federal Student Aid	534	34	2 percentage points	19 percentage points
Submitted at least one college application	374	27	7 percentage points	15 percentage points
ACT Engage goal striving scale score	578	40	.16	.21
ACT Engage commitment to college scale score	578	40	.06	.21
Eligible for federal school lunch program				
Completed Free Application for Federal Student Aid	515	42	3 percentage points	22 percentage points
Submitted at least one college application	365	33	2 percentage points	19 percentage points
ACT Engage goal striving scale score	636	44	.18	.20
ACT Engage commitment to college scale score	636	44	.13	.20

Note: Effect sizes for dichotomous outcomes are the difference in percentage points between students in Ramp-Up schools and students in comparison schools. Effect sizes for continuous outcomes are standardized mean differences (Hedges's *g*). Minimum detectable effect sizes for each outcome are based on sample sizes from the study, with alpha set at .05 and power set at .80.

Source: Authors' calculations based on data from the analytic sample.

for blocks) and include block at the school level. The treatment condition indicator, which specifies whether a student attended a Ramp-Up school or a comparison school, is included at the school level. For dichotomous variables, a logit link function is used to transform the dependent variable into the odds of achieving a particular outcome.

The general model for all outcomes was:

Level 1 model: Students-within-schools

$$\eta_{ij} = \beta_{0j} + \sum_{p=1}^{P} \beta_{pj} a_{pij} + e_{ij}$$

where i is students in school j ($i = 1, \ldots, I$), j is high schools ($j = 1,\ldots, J$), η_{ij} is the outcome for student i in high school j, a_{pij} is the pth student characteristic for student i in high school j, and e_{ij} is a random error term for student i in high school j.

Level 2 model: Schools

$$\beta_{0j} = \gamma_{00} + \gamma_{01} T_{01j} + \gamma_{02} Y_{02j} + \sum_{q=1}^{Q} Y_{0q} X_{0qj} + \sum_{s=2}^{S} \theta_{0s} B_{0sj} + r_{0j}$$

$$\beta_{pj} = \theta_{p} \text{ for } p > 0$$

where T_{01j} is an indicator of assignment to the treatment condition for high school j, Y_{02j} is an indicator of cohort year for high school j, X_{0qj} is the qth characteristic for high school j, ($q = 1,\ldots, Q$), β_{01j} is an indicator of block membership in block s for high school j ($s = 1, \ldots, 5$), and r_{0j} is a random error term for high school j.

Logit link function (for dichotomous dependent variables):

$$\eta_{ij} = \log\left(\frac{u_{ij}}{1 - u_{ij}}\right)$$

where η_{ij} is the log odds of a success for student i in high school j, and u_{ij} is the probability of success for student i in high school j.

At the student level, models include the following student baseline demographic characteristics: indicator variables for race/ethnicity, gender, eligibility for the federal school lunch program, Individualized Education Program status, English learner status, and grade level for analyses that use multiple grades. In addition, the models include measures of academic achievement (unweighted cumulative high school grade point average and scores on the grade 8 state standardized math test). At the school level, models include an indicator of treatment condition, block membership (see figure B1 for blocks), and a prior school-level measure of the dependent variable (for example, percentage of grade 12 students completing the FAFSA in 2013/14 in the model predicting FAFSA completion). The variables included in each model are shown in table B8.

Findings in the report are those from analyses in which missing data were imputed (with the specific approach to imputation depending on the particular covariate; see description of variables above) and indicator variables that specified which students had missing

Table B8. Description of impact analysis models, by research question

Research question	Dependent variable	Sample	Level 1 covariates	Level 2 covariates
Confirmatory research question 1	Completion of the Free Application for Federal Student Aid (binary)	Students in grade 12	Indicators of race/ethnicity, gender, eligibility for the federal school lunch program, Individualized Education Program status, English learner status, state standardized math score, high school grade point average	Indicator of treatment condition, block membership, percentage of students completing the FAFSA in 2013/14
Confirmatory research question 2a	ACT Engage goal striving scale score (continuous)	Students in grades 10, 11, and 12	Indicators of race/ethnicity, gender, eligibility for the federal school lunch program, Individualized Education Program status, English learner status, state standardized math score, high school grade point average, grade level	Indicator of treatment condition, block membership, average ACT Engage goal striving scale score for grade 10–12 students in fall 2014/15
Confirmatory research question 2b	ACT Engage commitment to college scale score (continuous)	Students in grades 10, 11, and 12	Indicators of race/ethnicity, gender, eligibility for the federal school lunch program, Individualized Education Program status, English learner status, state standardized math score, high school grade point average, grade level	Indicator of treatment condition, block membership, average ACT Engage commitment to college scale score for grade 10–12 students in fall 2014/15
Exploratory research question 1	Submission of at least one college application (binary)	Students in grade 12	Indicators of race/ethnicity, gender, eligibility for the federal school lunch program, Individualized Education Program status, English learner status, state standardized math score, high school grade point average	Indicator of treatment condition, block membership, percentage of grade 12 students who submitted at least one college application in 2013/14
Exploratory research question 2a	Completion of the Free Application for Federal Student Aid (binary) ACT Engage goal striving scale score (continuous) ACT Engage commitment to college scale score (continuous) Submission of at least one college application (binary)	Students who scored in the middle third on the grade 8 state standardized math test	Varies by dependent variable	Varies by dependent variable

(continued)

Table B8. Description of impact analysis models, by research question *(continued)*

Research question	Dependent variable	Sample	Level 1 covariates	Level 2 covariates
Exploratory research question 2b	Completion of the Free Application for Federal Student Aid (binary) ACT Engage goal striving scale score (continuous) ACT Engage commitment to college scale score (continuous) Submission of at least one college application (binary)	Students who scored in the upper third of grade 8 state standardized math test	Varies by dependent variable	Varies by dependent variable
Exploratory research question 2c	Completion of the Free Application for Federal Student Aid (binary) ACT Engage goal striving scale score (continuous) ACT Engage commitment to college scale score (continuous) Submission of at least one college application (binary)	Students eligible for the federal school lunch program	Varies by dependent variable	Varies by dependent variable

Note: See figure B1 for block membership.

Source: Authors' study plan.

data on particular values were included. When the same analyses were performed without imputed values (where cases with missing values are dropped), the magnitudes of impact estimates were similar to those produced with imputed data.

Predicted probabilities for dichotomous outcomes. Supplemental analyses were conducted to calculate the differences in probabilities between students in Ramp-Up and comparison groups for the dichotomous outcomes of likelihood of completing the FAFSA and likelihood of submitting at least one college application (see figure C1 in appendix C). For example, to calculate the change in the predicted probability of completing the FAFSA associated with being in the Ramp-Up group, the following steps were taken. First, the linear predictor of the log odds of being in the Ramp-Up group was calculated for all students. This linear predictor was calculated as the sum of: (1) the estimated coefficient of being in the Ramp-Up group multiplied by 1 minus the grand mean of being in the Ramp-Up group and (2) the intercept. Second, the probability of being in the Ramp-Up group was calculated as a transformation of the linear predictor; this probability equals 1/[1+exp(−1**linear_predictor*)]. Third, the corresponding linear predictor and probability of not being in the Ramp-Up group was calculated. Finally, the difference between the two predicted probabilities was calculated. This value indicates the difference in predicted probabilities associated with being in the Ramp-Up group for a typical student, where "typical" refers to a student whose values for all variables except treatment condition are at the grand mean among students in the model and the random student and school effects are equal to zero.

Calculating Hedges's g. Results for continuous outcomes were converted into a common metric (or effect size)—Hedges's *g*. This statistic represents the standardized mean

difference, or the difference between a treatment group and a control group, gauged against the average standard deviation of the two groups:

$$g = \frac{\chi_1 - \chi_2}{\sqrt{\frac{(n_1 - 1)s_1^2 + (n_2 - 1)s_2^2}{n_1 + n_2 - 2}}}$$

where χ_1 is the mean for the treatment group, χ_2 is the mean for the comparison group, n_1 is the student sample sizes for the treatment group, n_2 is the student sample sizes for the comparison group, s^2_1 is the variation in outcome measure for the treatment group, and s^2_2 is the variation in outcome measure for the comparison group.

Analyses of treatment contrast. To determine whether the supports and processes that comprise Ramp-Up to Readiness were different from those that comparison schools used to improve the college readiness of their students (or treatment contrast), the study team conducted three analyses. First, they examined the types of college-readiness supports listed on the staff survey to determine which ones were present in their school. If a staff member indicated that a support was present, it was coded 1; otherwise, it was coded 0. The study team averaged the staff responses for each school, producing a score for each type of support that ranged from 0 to 1 depending on staff consensus that the support was present. These proportions were converted into percentages and averaged across schools in each group (see table 1 in the main text).

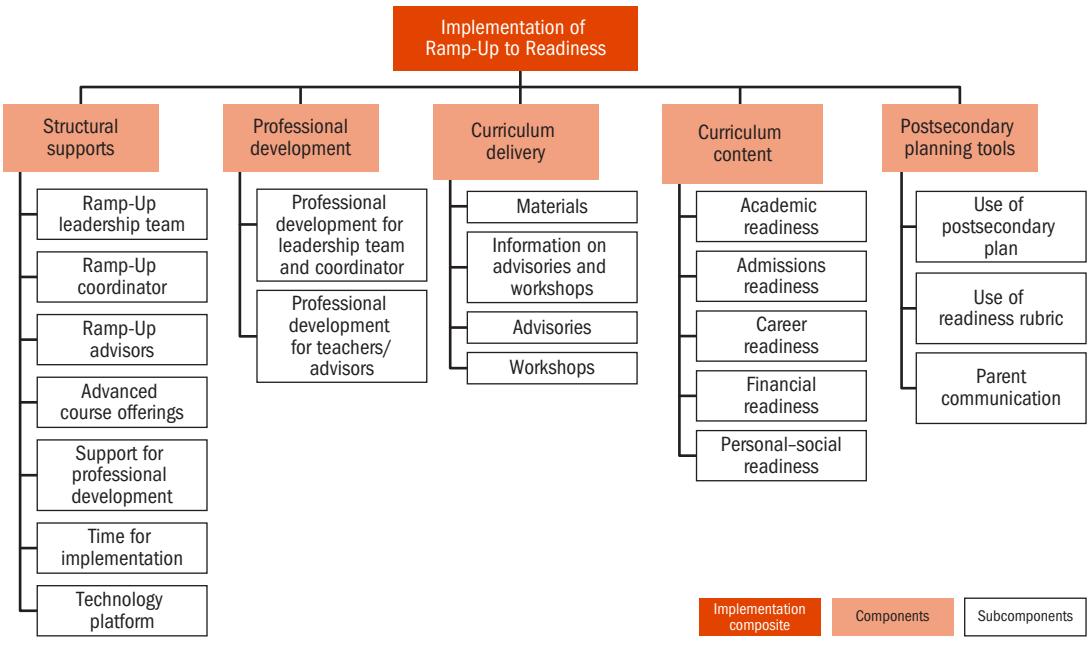
Second, the study team looked at staff responses to items on the fall and spring surveys as well as students' responses to items on the student surveys related to college-focused activities. The fall staff survey contained items on curriculum and technology (for example, courses that students can take for college credit, a technology platform capable of storing students' postsecondary plans), college-focused professional development, and a process for students to create a postsecondary plan. Staff responses to items on curriculum and technology, professional development, and the postsecondary planning process were coded 0 or 1, depending on whether these types of college-focused supports were present. The codes across staff members within schools were averaged and converted to percentages (representing percentage of agreement among staff that particular college-readiness supports were present). The student surveys included items asking about college-focused staff interactions with students. Students' responses also were coded so that 1 indicated that staff did work with students on a particular dimension of readiness or 0 if staff did not assist students on that dimension. Each student's coded responses for items indicating "college-focused staff–student interactions" were averaged for each student and converted to a percentage (representing the student's percentage agreement that staff interact with students around college readiness). The findings presented in figure 4 in the main text represent the averages across students within schools and then across schools for each group.

Third, the study team examined students' response to survey items asking about staff interactions with students with respect to the five dimensions of college-readiness. The study team broke out students' responses for each dimensions of readiness (see figure 5 in the main text). The averages portrayed in this figure are covariate adjusted, and the statistical significance for each dimension is based on hierarchical linear models that controlled for students within schools and school-level covariates.

Analysis of implementation fidelity. To answer the question of whether schools' implementation met the developer's expectations, the research team systematically examined the components and subcomponents of Ramp-Up that the developer considers essential for Ramp-Up to work (figure B2):

- *Structural supports.* According to the theory of action, for Ramp-Up to increase the likelihood of students enrolling and succeeding in college, school leaders need to establish the necessary structural supports for the program. These supports include establishing a Ramp-Up leadership team; appointing a Ramp-Up coordinator; obtaining the active participation of faculty (including having them lead advisories); establishing advanced courses; providing the opportunity and time for professional development, coordination, and preparation related to Ramp-Up; and implementing a technology platform for students, staff, and parents to access or store college-related information (such as the postsecondary plan and readiness rubric).
- *Professional development.* According to the consortium, successful implementation of Ramp-Up requires that members of the Ramp-Up leadership team participate in eight hours of professional development led by the consortium and that Ramp-Up coordinators participate in an additional four hours of professional development led by the consortium. This professional development typically begins prior to the school year. Successful implementation also involves training that the leadership team and coordinator provide to school staff, who will serve as Ramp-Up advisors. For successful implementation, the consortium expects Ramp-Up advisors to receive one four-hour training session at the beginning of the school year and 20-minute sessions during each of the nine months of the school year.
- *Curriculum delivery.* The consortium requires that groups of students receive 28 weekly lessons lasting 30 minutes each and five workshops lasting one hour each.

Figure B2. According to the developer of Ramp-Up, for the program to have effects, schools need to implement the program's key components and subcomponents



Source: The University of Minnesota's College Readiness Consortium.

The size of the groups varies by school. To effectively lead advisories and workshops, teachers need access to curriculum materials and sufficient information about the college-enrollment process to deliver the content.

- *Curriculum content.* For Ramp-Up to improve students' college readiness along five dimensions— academic readiness, admissions readiness, career readiness, financial readiness, and personal–social readiness (see box 1 in the main text for a description of each dimension)—content material related to all five dimensions needs to be presented throughout the school year.
- *Postsecondary planning tools.* For Ramp-Up to increase college readiness among all students, the program developer requires that teachers use the postsecondary plan and the readiness rubric to assist students in developing realistic postsecondary plans for achieving educational and career aspirations.[13] Fidelity is measured by teachers' familiarity with the tools, the degree to which they find the tools helpful for their specific purpose, how often they are used, and how many students in their classes actually use the tools. Teachers must also share information from these tools with parents in two-way communication.

Multiple indicators of each implementation component were embedded in the student and staff surveys. Other indicators were taken from information gathered from extant documents provided by the consortium.

After completing the data-coding procedures (see the previous section), an implementation index was calculated in three steps. First, for indicators of fidelity that are based on staff or student surveys, the study team analyzed average responses across school-level respondents, and the averages were then coded 0–1, similar to the indicators based on qualitative data. Second, for every school, a score was calculated for each subcomponent by averaging across the indicators for that subcomponent (see figure B2 for subcomponents). Two subcomponents—presence of a Ramp-Up leadership team and time for preparation—were calculated using weighted averages for indicators, based on suggestions from the consortium before the study. Third, the scores were averaged up, meaning that the averages of subcomponents were averaged to obtain each component score, and the overall fidelity index score was calculated by averaging school-level component scores. The index, therefore, represents the proportion of indicators of Ramp-Up that schools have successfully implemented (these indices are presented as percentages by multiplying by 100).

Finally, based on these fidelity index scores and cutpoints established by the consortium, schools' overall implementation, implementation of components, and implementation of subcomponents were classified into three categories.[14] Schools having fidelity index scores less than 60 percent were judged as showing inadequate implementation, those having scores in the range of 60–89 percent were judged as showing adequate implementation, and those having index scores of 90 percent or higher were judged as showing excellent implementation. Thus, schools are given labels of inadequate, adequate, or excellent for each subcomponent and component and for the entire fidelity of implementation model.

Appendix C. Detailed results

The tables in this appendix present complete results from analyses that address the confirmatory, exploratory, and implementation research questions.

Table C1. At baseline, Ramp-Up schools and comparison schools had student populations with similar demographic characteristics and student achievement, 2013/14

	Ramp-Up schools			Comparison schools			
Characteristic	Number	Mean	Standard deviation	Number	Mean	Standard deviation	Standardized difference[a]
School enrollment	25	474	439	25	505.9	432	–0.07
Students eligible for the federal school lunch program (%)	25	34.9	19.6	24	33.4	16.9	0.08
English learner students (%)	25	1.1	2.6	24	4.5	17.8	–0.33
Students with individualized educational programs (%)	25	14.1	5.2	24	13.3	5.5	0.15
American Indian/Alaska Native students (%)	25	10.1	22.0	24	3.9	8.0	0.41
Asian or Pacific Islander students (%)	25	2.4	4.0	24	2.0	3.5	0.11
Hispanic students (%)	25	4.5	5.7	24	3.6	3.8	0.19
Black students (%)	25	3.6	8.9	24	5.4	17.3	–0.14
White students (%)	25	79.3	24.4	24	85.2	20.0	–0.27
Students with state standardized math test score from grade 11[b] (%)	22	1,146	6.5	23	1,146	6.4	0.05
Students with state standardized reading test score from grade 10[b] (%)	23	1,049	5.3	22	1,050	6.3	–0.12
Four-year graduation rate (%)	25	82.7	21.2	24	88.8	11.8	–0.37
ACT composite score	19	21.6	1.3	23	21.7	2.1	0.00

a. Standardized using Cohen's *d*. None of the differences between Ramp-Up schools and comparison schools was statistically significant.

b. State standardized test refers to the Minnesota Comprehensive Assessment Series II and the Wisconsin Concepts and Knowledge Examination.

Source: Authors' analyses of data from Minnesota Department of Education (n.d.) and Wisconsin Department of Public Instruction (n.d.).

Table C2. Regression models predicting self-reported completion of the Free Application for Federal Student Aid, ACT Engage goal striving and commitment to college scale scores, and submission of at least one college application among all eligible students, by student and school characteristics

Characteristic	Self reported FAFSA completion[a]		ACT Engage goal striving scale score[b]		ACT Engage commitment to college scale score[b]		Submitted at least one college application[c]	
	Odds ratio	95 percent confidence interval	Beta	Standard error	Beta	Standard error	Odds ratio	95 percent confidence interval
Student characteristics								
Grade level	na	na	0.04	0.18	–0.20	0.19	na	na
Eligible for the federal school lunch program	0.87	0.68, 1.12	–0.05	0.36	–0.39	0.41	0.79	0.52, 1.19
Indicator of missing data on eligibility for the federal school lunch program	1.53***	1.24, 1.88	0.95	0.54	1.40***	0.35	1.01	0.41, 2.51
Female	0.98	0.81, 1.19	0.04	0.27	0.73*	0.32	1.33	0.95, 1.86
Indicator of missing data on gender	2.08***	1.49, 2.91	0.15	0.84	0.45	0.52	4.93	0.73, 33.28
English learner student indicator	1.07	0.35, 3.24	–0.10	0.80	–0.10	1.06	1.59	0.52, 4.85
Individual education program indicator	0.49***	0.35, 0.67	0.18	0.56	–0.43	0.71	0.83	0.50, 1.36
American Indian/Alaska Native	1.03	0.52, 2.03	0.29	1.15	0.39	1.18	1.35	0.50, 3.64
Black	1.28	0.87, 1.90	0.71	0.70	1.75	0.93	0.91	0.35, 2.41
Hispanic	1.14	0.68, 1.92	0.49	0.86	0.36	0.89	1.22	0.60, 2.47
Indicator of missing data on race/ethnicity	0.49*	0.28, 0.85	2.72***	0.53	1.04	0.59	0.13*	0.02, 0.89
Grade 8 MCA-II[d] math score	1.04	0.93, 1.17	0.13	0.16	0.08	0.19	0.97	0.78, 1.22
Indicator of missing MCA-II[d] math score	1.21	0.95, 1.55	0.07	0.38	0.38	0.48	0.67	0.43, 1.05
Cumulative grade point average, fall 2014[e]	3.05***	2.58, 3.61	1.01***	0.28	1.71***	0.33	3.88***	3.01, 5.01
Indicator of missing fall 2014 grade point average	1.18	0.30, 4.59	–2.92**	0.90	–1.87*	0.88	2.76	0.21, 35.86
ACT Engage goal striving scale score, fall 2014	na	na	0.70***	0.03	na	na	na	na
ACT Engage commitment to college scale score, fall 2014	na	na	na	na	0.71***	0.03	na	na
School characteristics								
Treatment condition	1.23	0.83, 1.82	0.11	0.43	0.09	0.60	1.26	0.66, 2.41
Block	1.00	0.85, 1.16	–0.10	0.20	–0.12	0.24	1.17	0.91, 1.49
Percentage of grade 12 students completing the FAFSA in 2013/14	0.75	0.09, 6.05	na	na	na	na	na	na
Average ACT Engage goal striving scale score, fall 2014	na	na	–0.06	0.22	na	na	na	na
Average ACT Engage commitment to college scale score, fall 2014	na	na	na	na	0.02	0.19	na	na
Percentage of grade 12 students who submitted at least one college application in 2013/14	na	na	0.04	0.18	–0.20	0.19	2.61	0.39, 17.37

* Significant at $p < .05$; ** significant at $p < .01$; *** significant at $p < .001$

FAFSA is the Free Application for Federal Student Aid. na is not applicable because the covariate was not used in the corresponding regression model. MCA is the Minnesota Comprehensive Assessment.

Note: Numbers in table are test coefficients from hierarchical linear models, with students nested in schools.

a. Based on 2,128 grade 12 students in 43 schools.

b. Based on 1,776 students in 45 schools.

c. Based on 1,526 grade 12 students in 36 schools.

d. Refers to the Wisconsin Concepts and Knowledge Examination for students in Wisconsin schools.

e. Data indicate the change based on a one-unit increase in grade point average (for example, from a 3.0 to a 4.0). So, the odds of completing the FAFSA increase by 3.05, meaning that students with a 4.0 grade point average are a little more than three times as likely as students with a 3.0 grade point average to self-report completing the FAFSA.

Source: Authors' calculations based on data from Ramp-Up and comparison schools and the Federal Student Aid website (https://studentaid.ed.gov/sa/about/data-center/student/application-volume/fafsa-completion-high-school).

Table C3. Regression models predicting self-reported completion of the Free Application for Federal Student Aid, ACT Engage goal striving and commitment to college scale scores, and submission of at least one college application among students between the 33rd and 66th percentiles of math achievement

Characteristic	Self reported FAFSA completion[a]		ACT Engage goal striving scale score[b]		ACT Engage commitment to college scale score[b]		Submitted at least one college application[c]	
	Odds ratio	95 percent confidence interval	Beta	Standard error	Beta	Standard error	Odds ratio	95 percent confidence interval
Student characteristics								
Grade level	na	na	–0.17	0.27	–0.69**	0.22	na	na
Eligible for the federal school lunch program	0.69	0.40, 1.17	–0.31	0.38	0.15	0.56	0.43	0.21, 0.87
Indicator of missing data on eligibility for the federal school lunch program	1.95**	1.24, 3.07	0.21	1.32	1.71	1.22	2.45*	0.47, 12.90
Female	1.09	0.78, 1.51	–0.11	0.36	0.54	0.42	na	na
Indicator of missing data on gender	1.69	0.86, 3.33	0.74	0.55	1.99**	0.69	na	na
English learner student indicator	na	na	–0.63	1.05	3.16	2.52	na	na
Individual education program indicator	0.52	0.13, 1.99	0.45	0.98	–1.61	1.51	0.50	0.12, 2.09
American Indian/Alaska Native	1.03	0.29, 3.62	–1.38	0.83	1.26	1.23	na	na
Black	3.74	0.36, 39.21	–0.85	0.95	0.18	1.68	na	na
Hispanic	0.61	0.35, 1.06	2.00	2.00	–0.11	2.06	na	na
Indicator of missing data on race/ethnicity	na	na	2.13**	0.79	1.76	0.95	na	na
Grade 8 MCA-II[d] math score	na	na	na	na	na	na	1.18	0.27, 5.12
Indicator of missing MCA-II[d] math score	na	na	na	na	na	na	na	na
Cumulative grade point average, fall 2014	na	na	1.44***	0.40	2.69***	0.47	na	na
Indicator of missing fall 2014 grade point average	na	na	0.15	2.37	0.15	1.94	na	na
ACT Engage goal striving scale score, fall 2014	na	na	0.74***	0.03	na	na	na	na
ACT Engage commitment to college scale score, fall 2014	na	na	na	na	0.72***	0.04	na	na
School characteristics								
Treatment condition	0.72	0.48, 1.08	0.41	0.45	–0.63	0.58	1.66	0.61, 4.52
Block	1.09	0.88, 1.34	–0.48*	0.22	–0.46	0.26	1.35	0.90, 2.02
Percentage of grade 12 students completing the FAFSA in 2013/14	14.23*	1.13, 179.22	na	na	na	na	na	na
Average ACT Engage goal striving scale score, fall 2014	na	na	–0.15	0.19	na	na	na	na
Average ACT Engage commitment to college scale score, fall 2014	na	na	na	na	0.17	0.19	na	na
Percentage of grade 12 students who submitted at least one college application in 2013/14	na	na	na	na	na	na	3.36	0.19, 61.01

* Significant at $p < .05$; ** significant at $p < .01$; *** significant at $p < .001$

FAFSA is the Free Application for Federal Student Aid. na is not applicable because the covariate was not used in the corresponding regression model. MCA is the Minnesota Comprehensive Assessment.

a. Based on 534 grade 12 students in 41 schools.

b. Based on 578 students in 38 schools.

c. Based on 374 grade 12 students in 27 schools.

d. Refers to the Wisconsin Concepts and Knowledge Examination for students in Wisconsin schools.

Source: Authors' calculations based on data from Ramp-Up and comparison schools and the Federal Student Aid website (https://studentaid.ed.gov/sa/about/data-center/student/application-volume/fafsa-completion-high-school).

Table C4. Regression models predicting self-reported completion of the Free Application for Federal Student Aid, ACT Engage goal striving and commitment to college scale scores, and submission of at least one college application among students at or above the 66th percentile of math achievement

Characteristic	Self-reported FAFSA completion[a]		ACT Engage goal striving scale score[b]		ACT Engage commitment to college scale score[b]		Submitted at least one college application[c]	
	Odds ratio	95 percent confidence interval	Beta	Standard error	Beta	Standard error	Odds ratio	95 percent confidence interval
Student characteristics								
Grade level	na	na	–0.12	0.36	0.02	0.34	na	na
Eligible for the federal school lunch program	0.49*	0.27, 0.90	–0.21	0.83	–0.10	0.78	0.57	0.17, 1.89
Indicator of missing data on eligibility for the federal school lunch program	0.76	0.34, 1.72	0.24	1.54	–0.33	1.28	0.60	0.09, 3.98
Female	1.53*	1.02, 2.29	1.28*	0.59	0.21	0.56	2.13	0.65, 6.95
Indicator of missing data on gender	3.08	0.87, 10.83	–0.62	1.91	0.59	1.51	0.72	0.06, 5.53
English learner student indicator	na	na	na	na	na	na	na	na
Individual education program indicator	na	na	–1.81	3.22	–2.69	3.02	0.58	0.06, 5.53
American Indian/Alaska Native	na	na	na	na	na	na	na	na
Black	na	na	na	na	na	na	na	na
Hispanic	na	na	na	na	na	na	na	na
Indicator of missing data on race/ethnicity	na	na	na	na	na	na	na	na
Grade 8 MCA-II[d] math score	na	na	na	na	na	na	1.10	0.39, 3.12
Indicator of missing MCA-II[d] math score	na	na	na	na	na	na	na	na
Cumulative grade point average, fall 2014	na	na	na	na	na	na	4.58***	2.07, 10.13
Indicator of missing fall 2014 grade point average	na	na	na	na	na	na	na	na
ACT Engage goal striving scale score, fall 2014	na	na	0.78***	0.04	na	na	na	na
ACT Engage commitment to college scale score, fall 2014	na	na	na	na	0.89***	0.04	na	na
School characteristics								
Treatment condition	1.38	0.85, 2.25	0.16	0.81	–0.28	0.66	1.19	0.29, 5.00
Block	0.81	0.65, 1.01	–0.43	0.35	–0.35	0.29	0.80	0.45, 1.42
Percentage of grade 12 students completing the FAFSA in 2013/14	0.06	0.00, 1.45	na	na	na	na	na	na
Average ACT Engage goal striving scale score, fall 2014	na	na	0.40	0.36	na	na	na	na
Average ACT Engage commitment to college scale score, fall 2014	na	na	na	na	0.12	0.20	na	na
Percentage of grade 12 students who submitted at least one college application in 2013/14	na	na	na	na	na	na	3.19	0.07, 152.27

* Significant at $p < .05$; ** significant at $p < .01$; *** significant at $p < .001$

FAFSA is the Free Application for Federal Student Aid. na is not applicable because the covariate was not used in the corresponding regression model. MCA is the Minnesota Comprehensive Assessment.

a. Based on 445 grade 12 students in 39 schools.

b. Based on 390 students in 44 schools.

c. Based on 297 grade 12 students in 26 schools.

d. Refers to the Wisconsin Concepts and Knowledge Examination for students in Wisconsin schools.

Source: Authors' calculations based on data from Ramp-Up and comparison schools and the Federal Student Aid website (https://studentaid.ed.gov/sa/about/data-center/student/application-volume/fafsa-completion-high-school).

Table C5. Regression models predicting self-reported completion of the Free Application for Federal Student Aid, ACT Engage goal striving and commitment to college scores, and submission of at least one college application among students eligible for the federal school lunch program

Characteristic	Self-reported FAFSA completion[a]		ACT Engage goal striving scale score[b]		ACT Engage commitment to college scale score[b]		Submitted at least one college application[c]	
	Odds ratio	95 percent confidence interval	Beta	Standard error	Beta	Standard error	Odds ratio	95 percent confidence interval
Student characteristics								
Grade level	na	na	–0.47	0.33	–0.29	0.36	na	na
Eligible for the federal school lunch program	na	na	na	na	na	na	na	na
Indicator of missing data on eligibility for the federal school lunch program	na	na	na	na	na	na	na	na
Female	0.80	0.52, 1.22	0.08	0.56	1.31*	0.62	2.32**	1.29, 4.15
Indicator of missing data on gender	1.10	0.16, 7.43	1.01	1.75	–0.49	1.80	0.71	0.07, 7.01
English learner student indicator	0.80	0.29, 2.20	0.29	1.29	–0.07	1.36	1.43	0.36, 5.72
Individual education program indicator	0.39*	0.19, 0.81	–0.24	0.75	–1.10	0.82	0.60	0.28, 1.30
American Indian/Alaska Native	0.38	0.14, 1.08	–0.05	1.08	–0.35	1.14	0.66	0.20, 2.20
Black	1.19	0.54, 2.65	1.18	1.13	3.33**	1.22	0.59	0.17, 2.12
Hispanic	1.10	0.60, 1.99	0.12	0.94	0.72	1.02	0.55	0.24, 1.29
Indicator of missing data on race/ethnicity	0.00	0.00, 1.00	1.36	1.88	–0.11	1.99	0.25	0.01, 5.16
Grade 8 MCA-II[d] math score	0.83	0.61, 1.13	0.64	0.36	0.52	0.39	1.13	0.26, 1.22
Indicator of missing MCA-II[d] math score	1.02	0.55, 1.90	–0.24	0.74	–1.11	0.80	0.57	0.26, 1.22
Cumulative grade point average, fall 2014	3.16***	2.21, 4.52	0.57	0.41	1.13*	0.46	na	na
Indicator of missing fall 2014 grade point average	0.92	0.11, 7.69	–3.68*	1.73	–1.03	1.82	na	na
ACT Engage goal striving scale score, fall 2014	na	na	0.69***	0.03	na	na	na	na
ACT Engage commitment to college scale score, fall 2014	na	na	na	na	0.72***	0.03	na	na
School characteristics								
Treatment condition	1.33	0.68, 2.60	–0.08	0.69	0.28	0.71	1.11	0.44, 2.78
Block	1.15	0.87, 1.53	–0.11	0.26	–0.11	0.27	1.51*	1.07, 2.14
Percentage of grade 12 students completing the FAFSA in 2013/14	0.26	0.02, 3.21	na	na	na	na	na	na
Average ACT Engage goal striving scale score, fall 2014	na	na	–0.11	0.23	na	na	na	na
Average ACT Engage commitment to college scale score, fall 2014	na	na	na	na	–0.08	0.18	na	na
Percentage of grade 12 students who submitted at least one college application in 2013/14	na	na	na	na	na	na	7.07	0.55, 90.43

* Significant at $p < .05$; ** significant at $p < .01$; *** significant at $p < .001$

FAFSA is the Free Application for Federal Student Aid. na is not applicable because the covariate was not used in the corresponding regression model. MCA is the Minnesota Comprehensive Assessment.

a. Based on 515 grade 12 students in 43 schools.

b. Based on 636 students in 44 schools.

c. Based on 365 grade 12 students in 33 schools.

d. Refers to the Wisconsin Concepts and Knowledge Examination for students in Wisconsin schools.

Source: Authors' calculations based on data from Ramp-Up and comparison schools and the Federal Student Aid website (https://studentaid.ed.gov/sa/about/data-center/student/application-volume/fafsa-completion-high-school).

Table C6. Ramp-Up schools' implementation scores show adequate fidelity overall, but some components and subcomponents were inadequately implemented, 2014/15

Component/subcomponent	Average implementation scores				Fidelity classifications (percent of schools)		
	All schools (average)	Fidelity score[a]	Lowest score	Highest score	Excellent	Adequate	Inadequate
Overall fidelity	71	A	57	78	0	96	4
Structural supports	77	A	56	90	4	92	4
Ramp-Up leadership team	73	A	50	100	24	52	24
Ramp-Up coordinator	88	A	39	100	64	32	4
Ramp-Up advisors	94	E	77	100	96	4	0
Advanced courses	86	A	50	100	52	40	8
Support for professional development	71	A	0	100	36	32	32
Time to implement	50	I	8	90	4	12	84
Technology platform[b]	22	I	6	86	0	4	96
Professional development[b]	87	A	73	100	32	64	0
For leadership team/coordinator	93	E	70	100	72	28	0
For teachers/advisors[b]	79	A	60	97	21	79	0
Curriculum delivery	75	A	52	86	0	96	4
Materials	74	A	41	91	8	80	12
Information on advisories and workshops	76	A	43	87	0	88	12
Advisories	92	E	67	100	64	36	0
Workshops[c]	54	I	13	88	0	50	50
Curriculum content[b]	62	A	49	72	0	63	37
Academic readiness[b]	52	I	38	70	0	17	83
Admissions readiness[b]	62	A	53	73	0	67	33
Career readiness[b]	60	A	39	81	0	42	58
Financial readiness[b]	50	I	33	82	0	12	88
Personal–social readiness[b]	86	A	69	94	20	80	0
Postsecondary planning tools	53	I	39	71	0	12	88
Use of postsecondary plan	62	A	48	81	0	60	40
Use of readiness rubric	64	A	41	88	0	52	48
Parent communication	12	I	0	44	0	0	25

Note: The indicators for this component come exclusively from the student survey, which was administered to 24 of the 25 Ramp-Up schools because one Ramp-Up school was unable to administer that survey prior to the end of the school year.

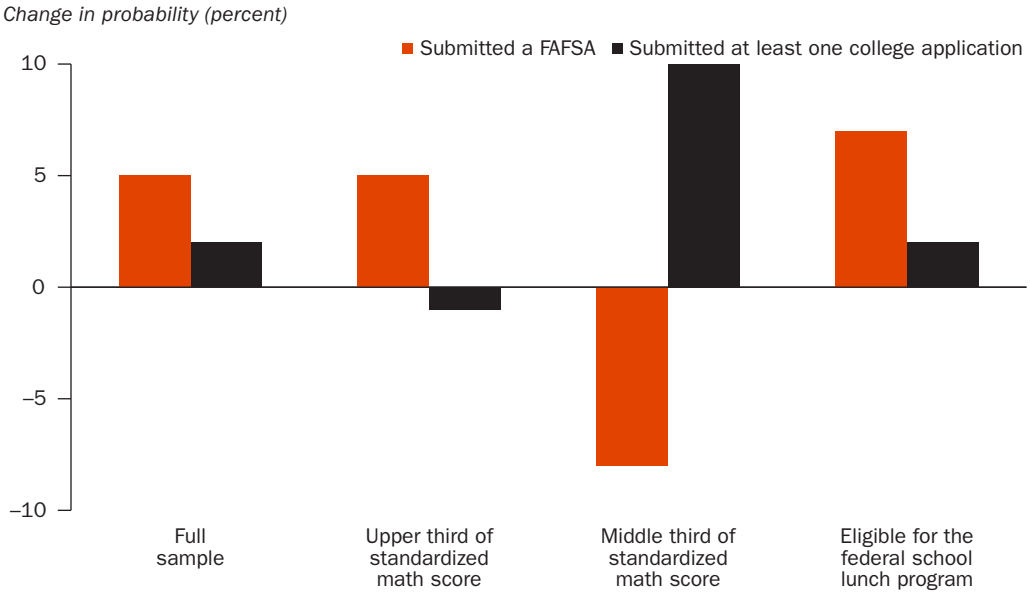
a. *E* indicates excellent implementation (scores greater than or equal to 90 percent); *A* indicates adequate implementation (fidelity scores between 60 percent and 89 percent); *I* indicates inadequate implementation (fidelity scores less than 60 percent).

b. Based on 24 schools.

c. Based on 22 schools.

Source: Authors' calculations based on student and staff survey data from fall 2014 and spring 2015.

Figure C1. Change in predicted probability of completing the Free Application for Federal Student Aid and submitting at least one college application between students in Ramp-Up schools and students in comparison schools, 2014/15



Note: Positive percentages indicate that students in Ramp-Up schools were more likely than students in comparison schools to perform the enrollment-related action; negative percentages indicate that students in Ramp-Up schools were less likely. None of the differences between Ramp-Up schools and comparison schools was statistically significant.

Source: Authors' calculations based on extant student data and student survey data from fall 2014 and spring 2015.

Notes

1. The What Works Clearinghouse is an initiative of the U.S. Department of Education Institute of Education Sciences to develop standards by which to gauge whether studies are rigorous enough to detect causal relationships and to evaluate the strength of evidence on the effectiveness of programs. More information is available at http://ies.ed.gov/ncee/wwc/.
2. The alliance consists of representatives of state affiliates of the National College Access Network, community college boards of directors, state education agencies, and state higher education agencies. Members come from six of the seven Regional Educational Laboratory Midwest Region states (Illinois, Indiana, Iowa, Michigan, Minnesota, and Ohio).
3. The original impact study sample included 50 high schools, 25 randomly assigned to each group. One school in the comparison group dropped out of the study, leaving 49 schools in the final sample.
4. The number of schools (18 Ramp-Up schools and 19 comparison schools) included in this analysis is smaller than the total number of participating schools because not all schools administered the student survey.
5. The comparisons between the two groups of schools for these subsamples may have been underpowered. That is, there may have been too few schools and students in these samples to detect smaller effects (see table B7 in appendix B for the minimum detectable effect sizes for these subsamples).
6. Exact school details are omitted to protect schools' identities.
7. The study team substantiated this assumption by comparing data in the study sample with school-level enrollment data on Individualized Education Programs and English learner status maintained by the state.
8. For schools with fewer than 30 students in a grade, the study team requested that all students in the grade complete the student survey.
9. The ACT Engage survey was administered to only a sample of grade 12 students because of resource constraints.
10. This number is lower than expected because not all schools had 30 students in each grade. In those cases, all students were selected to complete the ACT Engage survey.
11. In the domain of social engagement the ACT Engage scales are social connection and social activity. In the domain of self-regulation the scales are academic self-confidence and steadiness. In the domain of motivation and skills the scales are academic discipline, general determination, goal striving, commitment to college, study skills, and communication skills. Students took the complete assessment (all 10 scales) because that is the form in which ACT offers it.
12. These studies examine the predictive validity of an earlier version of ACT Engage known as the Student Readiness Inventory among two- and four-year college students. No published data are available for high school samples.
13. The consortium recommends that Ramp-Up schools store and maintain students' postsecondary plans using an electronic platform. Paper versions of the postsecondary plan are two pages, with fields in which students enter information related to each dimension of readiness. Students record their career aspirations and the colleges that match their interests, and then they offer a course of study geared to their career choice. Students also enter courses that will help them meet admission criteria sought by their college of choice. The readiness rubric is a self-assessment on which students rate their progress on following through on their postsecondary plan. Paper copies of

both the postsecondary plan and readiness rubric are available from the authors or from the College Readiness Consortium.

14. The consortium established these cutpoints for schools during their first year of implementation. Hypothetically, the cutpoints would be higher for schools that have been implementing Ramp-Up longer.

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