What's Happening

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Ramping up for college readiness in Minnesota high schools: Implementation of a schoolwide program

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Key findings

Ramp-Up to Readiness™, a program designed at the University of Minnesota to provide more substantial college readiness supports for middle and high school students, was implemented in 10 schools in 2013/14. A comparison of these schools with 10 similar schools that had not implemented Ramp-Up found that:

- Ramp-Up schools provided more emphasis on college readiness, and teachers in Ramp-Up schools provided more emphasis on four of five dimensions of readiness.
- When averaged across the Ramp-Up's core components, Ramp-Up schools' implementation scores met the developer's threshold for adequate fidelity.
- However, 8 of the 10 schools had difficulty with developing and monitoring students' postsecondary plans, which is one of Ramp-Up's core component processes.
- Ramp-Up schools' staff generally had a favorable view of the program and offered several ways to improve it.

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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, 2013; Hanushek & Kimko, 2000; Hanushek & Woessmann, 2012). Thus, states and high schools strive to better prepare students to enroll and succeed in college.

The College Readiness Consortium at the University of Minnesota has 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 students in middle schools and high schools. The program has been piloted in 52 middle and high schools throughout Minnesota, but few data are available on the program's effectiveness. Stakeholders involved in the Midwest College and Career Success Research Alliance expressed an interest in learning more about the program: how it 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, and how school staff perceive the program. Since 2012 the Regional Educational Laboratory (REL) Midwest has worked with members of the alliance to find answers.

This report identifies the core components of the Ramp-Up program, provides information on how Ramp-Up differs from other college readiness activities, measures the degree to which schools in a sample of Minnesota high schools were able to meet the consortium's standards for adequate implementation, and provides comments from high school staff about the program's strengths and weaknesses as well as the challenges they experienced while implementing it.

Twenty Minnesota public schools serving grades 10–12 were involved in the study. Ten of the 20 schools were randomly assigned to implement Ramp-Up during the 2013/14 school year, while the other 10 were assigned to implement Ramp-Up during 2014/15. During April–July 2014 the study team collected data from staff and students at these schools. Data collection included interviews with the school staff members who were most familiar with the schools' college readiness programming, focus groups with staff, and staff surveys. Students in grades 10–12 also completed a survey.

The study's main findings are:

- Schools implementing Ramp-Up provided more emphasis on college readiness than non-Ramp-Up schools did, and teachers in Ramp-Up schools provided more emphasis on four of the five dimensions of readiness than teachers in non-Ramp-Up schools did.
- When averaged across Ramp-Up program components, all schools' implementation fidelity scores fell within the range that the consortium had designated as adequate.
- However, 8 of the 10 Ramp-Up schools had difficulty developing and monitoring students' postsecondary plans, which is one of Ramp-Up's core component processes.
- Ramp-Up schools' staff generally had a favorable view of the program and offered several ways to improve it.

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Why this study?

A college education is fundamental to students' upward mobility, states' economic growth, and the country's economic competitiveness (Bureau of Labor Statistics, 2013; Hanushek & Kimko, 2000; Hanushek & Woessmann, 2012). Most high school graduates (93 percent) plan to enroll in college (Ross et al., 2012), but many encounter obstacles. For example, some graduates struggle with completing college entrance applications or financial aid applications (Avery & Kane, 2004; Roderick, Nagaoka, Coca, & Moeller, 2008). Only 75 percent of students who plan to go to college enroll within two years of graduation (Berkner & Chavez, 1997). Of students who do enroll, less than 60 percent graduate (National Center for Education Statistics, 2011). Faced with this gap between college plans and college completion, states and high schools are being pressured to better prepare students to enroll and succeed in college.

States, school districts, and schools have adopted a number of strategies to respond to the pressure to increase rates of college enrollment and success

States, school districts, and schools have adopted a number of strategies to respond to the pressure to increase rates of college enrollment and success. These strategies include those recommended in the What Works Clearinghouse practice guide on helping students prepare for college (Tierney, Bailey, Constantine, Finkelstein, & Hurd, 2009).[1] The recommendations are:

- Offer courses and curricula that prepare students for college-level work.
- Use assessment measures to track students' level of preparation for college.
- Surround students with peers who support college-going aspirations.
- Assist students in completing the steps for college entry.
- Increase families' financial awareness and help students apply for financial aid.

School structures and the beliefs of school staff may impede successful implementation of these recommendations. Traditionally, high schools have been structured such that teachers' responsibilities focus on providing instruction to students in their content area, while helping students understand postsecondary options has been the responsibility of schools' guidance counselors. Yet guidance counselors may not have the capacity to provide all students with the types of supports recommended in the What Works Clearinghouse's practice guide (Fazekas & Warren, 2010). Also impeding high schools' efforts at implementing these recommendations is the belief among school staff that students will naturally sort themselves into the college-bound category or the non-college-bound category and that the recommendations apply mostly to students who self-identify as college bound (Fazekas & Warren, 2010). In the parlance of response to intervention, this belief among some school staff treats the recommended college-readiness supports as Tier 2 interventions: those students who self-identify as college-bound are provided with the supplemental supports.

Another approach that aims to improve college enrollment and success rates introduces all students to college readiness programming (much like a Tier 1 intervention) and does so when students are in the middle school grades (grades 6–8). Through this developmental approach students at different grade levels participate in age-appropriate college-related activities. These activities, as well as career planning and plan monitoring and refinement, continue as students progress through high school (Bouffard & Savitz-Romer, 2012). Researchers at the College Readiness Consortium at the University of Minnesota have created a program for middle schools and high schools—called Ramp-Up to Readiness™ (Ramp-Up)—that attempts to improve students' readiness for college by using this developmental approach (see box 1 for a description of the Ramp-Up program). As of 2014, Ramp-Up had been implemented in 52 middle schools and high schools.

Box 1. Ramp-Up to Readiness program description

Ramp-Up to Readiness™ (Ramp-Up) is a research-based school guidance intervention developed by the College Readiness Consortium at the University of Minnesota. 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 report) 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 of enrolling and succeeding in college (see appendix A for a summary of research supporting these dimensions).

Implementation model

To enhance students' readiness along the five dimensions (referred to as outputs in the theory of action in figure 1), the consortium expects schools adopting Ramp-Up to implement the following processes:

- *Distributive leadership.* Schools are expected to assign staff to Ramp-Up roles, which include Ramp-Up leadership team members (assigned to the school administrator, guidance counselor, and one or two lead teachers), Ramp-Up coordinator (assigned to a lead teacher), and Ramp-Up advisors (assigned to all teachers).
- *Off-site and on-site professional development.* The Ramp-Up leadership team and Ramp-Up coordinator participate in off-campus training sessions conducted by the consortium, where they learn about the curriculum and how to implement the program. During on-campus professional development sessions these staff then share the curriculum and implementation strategy with the Ramp-Up advisors.
- *Advisories.* In their Ramp-Up advisor roles, all teachers—regardless of discipline—are expected to meet with small numbers of students and lead them through 28 age-appropriate advisory sessions of 30 minutes each (about one session per week) and five 1-hour workshops spaced throughout the year. During these sessions Ramp-Up advisors cover the content in the Ramp-Up curriculum. All students are expected to participate in the advisory sessions and workshops.
- *Guidance.* Ramp-Up advisors help students write out their postsecondary goals and the steps that the students can take at that point to progress toward their goals. Ramp-Up advisors and students also track students' progress throughout the school year.

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 lessons of 30 minutes each to students at each grade level (approximately one per week). In addition, students in each grade participate in five workshops during the school year, each lasting one class period and focusing on one of the five dimensions. Detailed documentation, including weekly lesson plans, activities, and student materials, is provided.

The Ramp-Up sessions and workshops connect to one of two types of activities: the postsecondary plan or the readiness rubric. In the postsecondary plan, students describe colleges and careers of interest, their planned coursework each year, and their extracurricular activities. Students use the readiness rubric to measure progress on their plans. Students update their postsecondary plan once a year and their readiness rubric three times a year. These tools are 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. School staff participate in Ramp-Up professional development activities. Before the school year starts, the consortium provides a full-day planning session for the Ramp-Up leadership team from each school and a half-day training session for the Ramp-Up coordinator from each school. At the beginning of the school year, each school's Ramp-Up leadership team and coordinator hold a four-hour training session for school staff in their school and monthly 20-minute training sessions at faculty meetings to preview Ramp-Up activities. The program provides materials, slides, and specific guidelines for use during the school professional development activities.

(continued)

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

Five dimensions of college readiness

Ramp-Up's curriculum was developed around 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 short-term, intermediate, and long-term outcomes. It was designed as a multiyear program because students at different grade levels typically complete different college-related activities at different times (for example, taking college admissions exams in grade 11 and completing college applications in grade 12). The consortium believes that Ramp-Up can influence some student outcomes within a single year of implementation, including sense of readiness for college, enrollment in advanced courses, completion of the Free Application for Federal Student Aid (grade 12), and completion of college entrance exams. The consortium also believes that students exposed to two years of Ramp-Up programming will show intermediate outcomes, including improved course grades and achievement test scores. In the long term the consortium expects that Ramp-Up will increase students' likelihood of enrolling in college, decrease the likelihood that they will need remedial coursework in college, and increase the likelihood that they will persist in college.

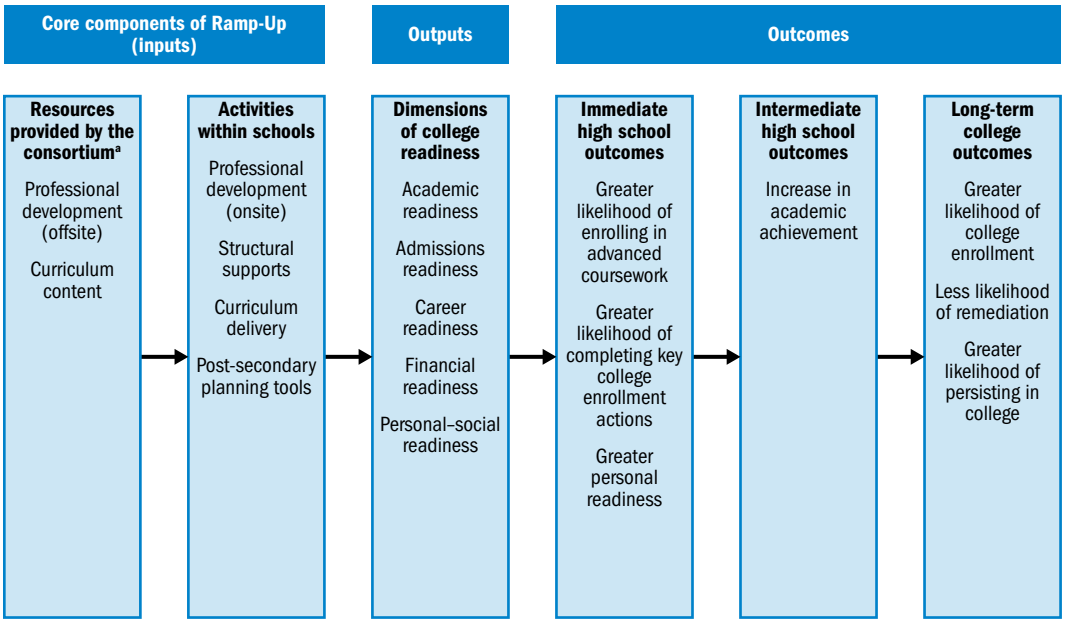
Impacts of the program result, theoretically, from the cumulative growth across all five dimensions of readiness. No one-to-one correspondence is hypothesized between the outcomes and the college readiness dimensions.

High school administrators seeking to develop advisories in their high school face several challenges. Not only do they need to carve out the necessary time for advisory sessions and workshops within the school schedule, but they must also initiate a shift in staff responsibilities and in staff beliefs about students' postsecondary options. Specifically, school administrators must:

- Initiate a change in teachers' responsibilities from that of content area instructor only to content area instructor and student advisor (Allen et al., 2006). With this shift, concern for students' postsecondary enrollment and success is no longer relegated to the school guidance counselors alone, but becomes a collective concern among the entire faculty.
- Initiate a change in beliefs among staff, from the traditional belief that only students who self-identify as college-bound should be encouraged to take advantage of supplemental college-oriented programs or initiatives (supports) to the belief that all students need guidance and encouragement to strive for postsecondary success (Fazekas & Warren, 2010).

To date, no independent evaluation has been conducted on Ramp-Up to determine whether schools are able to meet these implementation challenges and, if so, whether

Figure 1. Ramp-Up to Readiness theory of action



a. The College Readiness Consortium at the University of Minnesota.

Source: College Readiness Consortium, 2012.

Ramp-Up has had an impact on student outcomes. One group of stakeholders that seeks such information is the Midwest College and Career Success Research Alliance, which 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. The alliance has partnered with Regional Educational Laboratory (REL) Midwest to obtain more information about Ramp-Up's implementation and impact.

This study answers the questions most frequently asked by school and district administrators who are considering adopting Ramp-Up

This report provides initial evidence on whether schools can implement the program at levels considered adequate by the consortium. A subsequent series of reports will present information on the program's impact during the first year of implementation.

What the study examined

This study answers the questions most frequently asked by school and district administrators who are considering adopting Ramp-Up. They want to know what Ramp-Up is and how it differs from current college readiness efforts, whether schools are able to implement the program to the consortium's specifications, and what educators consider to be the program's strengths and weaknesses.[2]

This study involved 20 public schools in Minnesota that serve students in grades 10–12 (see box 2 for a brief summary of the methodology used for this study and appendix B for a more detailed description). In spring 2013 these 20 schools submitted applications to the consortium to receive one year of professional development, curricular materials, tools, and the consortium support needed to implement Ramp-Up at no cost to the schools. Half the 20 schools were randomly chosen to implement Ramp-Up during the 2013/14 school year and the other half during the 2014/15 school year.

Box 2. About the study

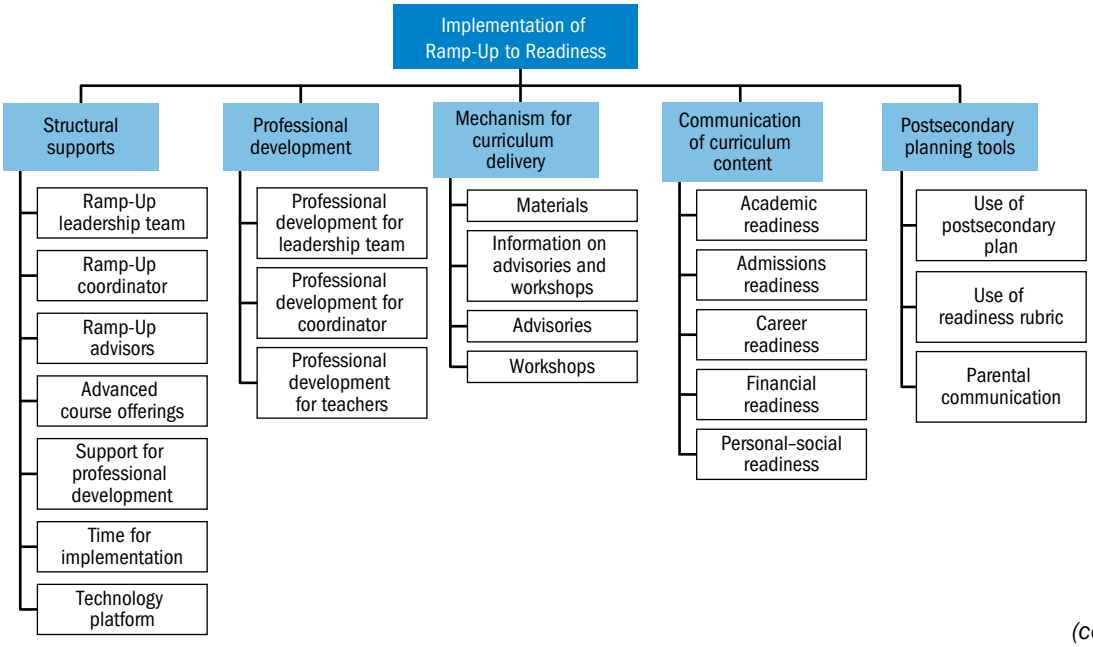
To address the research questions, the study team collected data during focus groups and interviews, administered surveys to school staff and students in grades 10–12, and obtained schools' planning documents.

Study design. The College Readiness Consortium at the University of Minnesota recruited 20 Minnesota high schools to participate in this study. With technical assistance from Regional Educational Laboratory Midwest, the consortium randomly assigned 10 of the 20 schools to implement Ramp-Up to Readiness (Ramp-Up) during the 2013/14 school year and the other 10 schools to implement Ramp-Up during the following school year (2014/15). This division of schools allows for comparison of the college readiness activities at Ramp-Up and comparison schools.

Data collection. To address the research questions, the study team collected the following data: school-level data from Minnesota's Department of Education; student records from schools, districts, and Minnesota's Department of Education; students' responses to a survey; transcripts from one interview and one focus group with staff of the Ramp-Up and non-Ramp-Up schools; documents from the schools and the consortium (such as the schools' implementation plans and master schedules, attendance logs from the consortium's training sessions); and teachers' responses from an online end-of-the-year survey. All data were from the 2013/14 school year and were collected from April to July 2014.

Establishing expectations for Ramp-Up schools. The study team worked with the consortium to identify the core components and subcomponents of the program (see figure below). For each subcomponent the study team identified one or more indicators. Questions about the presence or absence of those indicators were embedded in the interview and focus group questions and items in the staff and student surveys. Documents obtained from the consortium and schools also contained information about the presence or absence of indicators within the school. Documents and responses of staff and students were coded such that the presence of an indicator was signified with a code of 1, absence of the indicator was coded 0, and partial presence of the indicator received a code that fell between 0 and 1. For indicators assessed using the surveys, an overall score on the indicator was calculated by averaging the responses across survey respondents within the school. An index for each subcomponent was created by first calculating the average scores across the indicators for the subcomponent, dividing by the number of indicators for the subcomponent, and multiplying by 100. The consortium also established thresholds demarking whether schools in their first year were implementing with excellent fidelity (fidelity indices greater than or equal to 90 percent), adequate fidelity (60–89 percent), or inadequate fidelity (59 percent or less).

Core components and subcomponents for Ramp-Up to Readiness



(continued)

Box 2. About the study *(continued)*

Data analysis. To determine whether schools implementing Ramp-Up were similar to those in the comparison group and to other public high schools throughout Minnesota (research question 1), the study team gathered data on school characteristics for all Minnesota public high schools during the previous year (2012/13). Comparisons of Ramp-Up schools and non-Ramp-Up schools indicate whether the two groups differ in factors other than implementation of Ramp-Up. Comparison of Ramp-Up schools with other public high schools in Minnesota shows the degree to which the sample of schools is representative of Minnesota's public high schools in general. To determine whether the types of college readiness programming in Ramp-Up schools differ from the college readiness activities usually found in schools (research question 2), the study team analyzed several types of data. First, the study team listed all of the supplemental college readiness supports (defined as programs, initiatives, or resources) mentioned by interviewees and focus group members in response to direct questions about those supports. The number and types of supports provided by Ramp-Up schools were compared with those provided by non-Ramp-up schools. Second, the study team used staff and student survey data to examine the emphasis placed on college readiness activities in four domains: curriculum and technology, staff professional development, staff–student interactions, and postsecondary planning. Third, the study team created school-specific aggregated scores based on student survey responses about the degree to which staff work with students on each of the five dimensions of college readiness.[1] To compare Ramp-Up schools with non-Ramp-Up schools, the study team used accepted statistical approaches and established a 5 percent threshold for determining statistical significance (that is, $p < .05$). To determine whether Ramp-Up schools implemented the program's core components as intended (research question 3), the study team examined the responses to other interview, focus group, and survey questions for the presence or absence of Ramp-Up activities in schools. These coded data were aggregated into an overall fidelity index and separate fidelity indices for program components. Finally, the study team identified major themes from the responses of focus group members and interviewees in Ramp-Up schools about the program's strengths, limitations, and implementation challenges (research question 4).

Note

1. Items on student surveys had different response scales. To aggregate across items, the numeric responses were converted to *z*-scores (where the scale value is the number of standard deviation units about the grand mean).

The two-stage rollout with these 20 schools allowed the study team to compare the college readiness programming in Ramp-Up schools with the programming in other schools during the 2013/14 school year and to assess the extent to which the 10 schools implementing Ramp-Up that year were doing so with fidelity to the program specifications.

The research questions for the study were:

1. What are the characteristics of the schools implementing Ramp-Up to Readiness compared with schools in the study not implementing it and with schools in the state at large?
2. How does Ramp-Up differ from college-related supports in other schools?
3. To what extent did schools implement the core components of Ramp-Up as intended by the College Readiness Consortium at the University of Minnesota?
4. What do school staff in Ramp-Up schools perceive as the strengths and weaknesses of its curriculum, tools, and professional development, and which aspects of Ramp-Up did they consider more difficult to implement and why?

What the study found

Schools implementing Ramp-Up were similar to comparison schools. However, both sets of schools served student populations that were less racially/ethnically diverse, that were

less disadvantaged, and that had higher academic achievement than other high schools across Minnesota. Ramp-Up and comparison schools offered the same number and types of supplemental college-oriented supports (defined as programs, initiatives, or resources that are voluntary for students, such as dual enrollment programs, Upward Bound,[3] and presentations on financial aid). However, schools implementing Ramp-Up provided greater emphasis on four of five dimensions of college readiness than comparison schools did. On average, Ramp-Up schools implemented the intervention at levels that the consortium considers adequate, but most Ramp-Up schools failed to implement the planning tools component adequately.

Both Ramp-Up group and comparison group schools underrepresent Minnesota schools serving racially/ethnically diverse populations and low-performing schools

Compared with all public schools in the state, the study schools served students from families with higher incomes, had fewer students requiring special services, had less racial/ethnic diversity, and showed better academic performance as evidenced by standardized assessment scores, ACT scores, and graduation rates

All Minnesota public schools serving students in grades 10–12 and schools assigned to implement Ramp-Up during the 2013/14 school year tended to be located in rural areas and towns rather than cities and suburbs (table 1). However, compared with all public schools in the state, the study schools served students from families with higher incomes, had fewer students requiring special services (English learner students and students eligible for special education services), had less racial/ethnic diversity, and showed better academic performance as evidenced by standardized assessment scores, ACT scores, and graduation rates (table 2).

Ramp-Up and comparison schools gave students opportunities to participate in similar types of supplemental college-oriented supports, but Ramp-Up schools also placed greater emphasis on college readiness generally and on four of five dimensions of college readiness

The second research question asks how Ramp-Up differs from college readiness supports in other schools. The Ramp-Up curriculum was designed to be presented to all students in middle and high school grades. In theory, students exposed to the curriculum should demonstrate more readiness along all five dimensions (see figure 1), which, in turn, should improve their eligibility and motivation to take advantage of supplemental college-oriented supports that many Minnesota high schools offer.

Accordingly, the data may not show any differences in the number or types of the supplemental college-oriented supports that are offered in the two groups of schools. However, students and staff in Ramp-Up schools should report a greater emphasis on college

Table 1. Distribution of Ramp-Up to Readiness study schools and all Minnesota high schools serving grades 10–12, by locale, 2013/14 (percent)

Locale	Schools in Ramp-Up study		All Minnesota schools serving grades 10–12 (*n* = 423)
	Ramp-Up schools (*n* = 10)	Comparison schools (*n* = 10)	
City	10	0	11
Suburb	10	0	13
Town	20	20	19
Rural	60	80	50

a. Percentages do not sum to 100 because locale codes were unavailable for 8 percent of schools.

Source: U.S. Department of Education, 2014.

Table 2. Comparison of Ramp-Up to Readiness study schools and all Minnesota schools serving grades 10–12 on student demographic and academic characteristics, 2013/14

Demographic and academic characteristics	Schools in Ramp-Up study				All Minnesota schools serving grades 10–12 (*n* = 423)	
	Ramp-Up schools (*n* = 10)		Comparison schools (*n* = 10)			
	Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation
Students eligible for school lunch program (%)	32.9	17.9	36.0	16.4	39.6	21.1
English learner students (%)	0.7	2.0	0.8	2.0	3.7	11.3
Students eligible for special education services (%)	12.5	3.3	14.0	5.7	15.0	7.51
Native American students (%)	3.9	5.8	0.7	1.1	3.4	9.9
Asian/Pacific Islander students (%)	1.2	1.4	1.4	1.4	3.9	9.4
Hispanic students (%)	3.0	4.2	2.6	2.2	5.1	7.7
African-American students (%)	1.9	2.2	1.8	1.6	8.4	18.1
White students (%)	89.9	8.6	93.5	5.4	79.3	25.3
Minnesota Comprehensive Assessment, series II—math score	1,149.4	10.7	1,149.9	4.2	1,146.8	8.9
Minnesota Comprehensive Assessment, series III—reading score	1,054.0[a]	8.3	1,054.5	3.7	1,051.9	6.0
Four-year graduation rate (%)[b]	88.9[a]	6.1	90.0	4.1	81.8	21.5
ACT composite score	23.0[c]	1.9	22.1	0.7	22.1	1.7

Note: Means are unweighted. The school-level means for the Minnesota Comprehensive Assessment represent grade-based scale scores. Minnesota high schools administer the math assessment in grade 11 only, making the possible range 1101–1199, and the reading assessment in grade 10 only, making the possible range 1001–1099.

a. Based on nine schools with scores.

b. Percentage of students able to graduate in four years.

c. Based on eight schools with scores.

Source: Authors' analysis of Minnesota Department of Education's student and school files and ACT data as described in appendix B.

readiness generally than their counterparts in comparison schools. Students in Ramp-Up schools should also perceive greater staff focus on all five dimensions of college readiness than students in comparison schools.

Support offered by both Ramp-Up and comparison schools. Staff who participated in interviews and focus groups in Ramp-Up and comparison schools named many of the same program offerings as college readiness supports:

- Dual-enrollment programs (such as Advanced Placement courses, University of Minnesota's College in the Schools, college enrollment options).
- Upward Bound.
- Financial aid and scholarship nights.
- College tours or visits from college representatives.
- Seminars for juniors and seniors.

In most cases student participation in these college readiness supports was voluntary. Students had to meet certain eligibility requirements (for example, high grades in regular courses to take Advanced Placement courses; families with lower incomes or parents without college degrees for Upward Bound), and they needed the motivation to take advantage of the college readiness supports.

Emphasis on college readiness in Ramp-Up schools and comparison schools. Staff in Ramp-Up schools were more likely than staff in comparison schools to engage in college-oriented activities in three of the four tested domains: curriculum and technology, staff professional development, and staff–student interactions (statistically significant at $p < .05$; figure 2). Staff in Ramp-Up schools were not more likely than staff in comparison schools to take part in postsecondary planning. Furthermore, students in Ramp-Up schools perceived greater emphasis among staff on four of the five dimensions of college readiness (academic, admissions, career, and financial) than did students in comparison schools. However, students in the two groups of schools perceived a similar amount of staff support for personal–social readiness (figure 3).

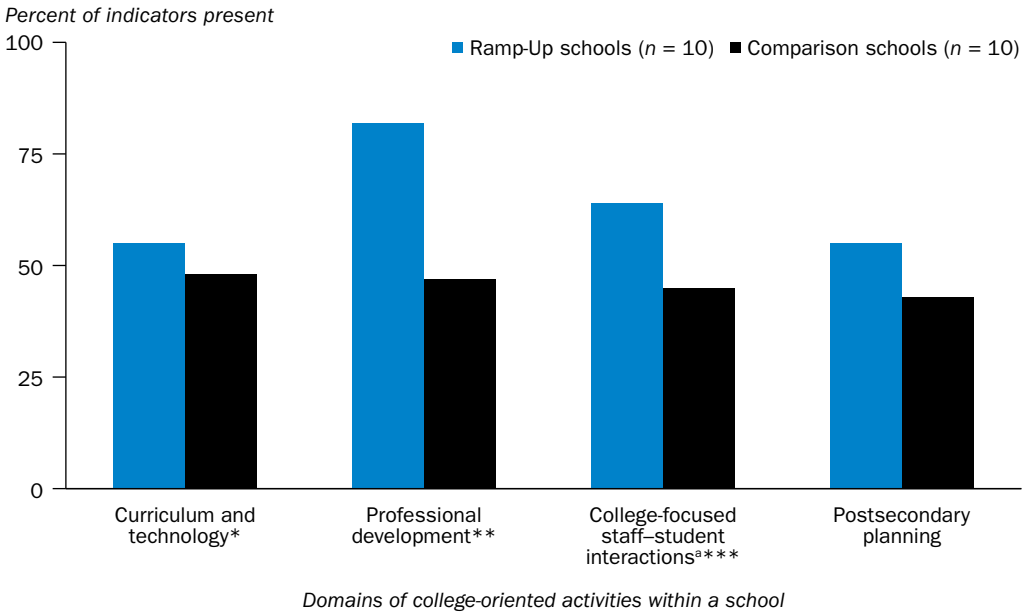
Overall, implementation fidelity among Ramp-Up schools was adequate by the consortium's standards, but fidelity varied across program components

Staff in Ramp-Up schools were more likely than staff in comparison schools to engage in college-oriented activities in three of the four tested domains: curriculum and technology, staff professional development, and staff–student interactions

Research question 3 asked whether schools assigned to the Ramp-Up group for 2013/14 were able to implement the program's key components (see figure in box 2) adequately by the consortium's standards. Cutpoint index scores demarking excellent, adequate, and inadequate implementation were set by the consortium.

Fidelity scores show that all 10 schools implementing Ramp-Up did so adequately by the consortium's standards (figure 4 and table 3; see appendix B for more detail on how fidelity scores were calculated). However, some schools were unable to implement some components adequately.

Figure 2. Staff in Ramp-Up to Readiness schools engaged in more college-oriented activities than did staff and students in comparison schools, 2013/14

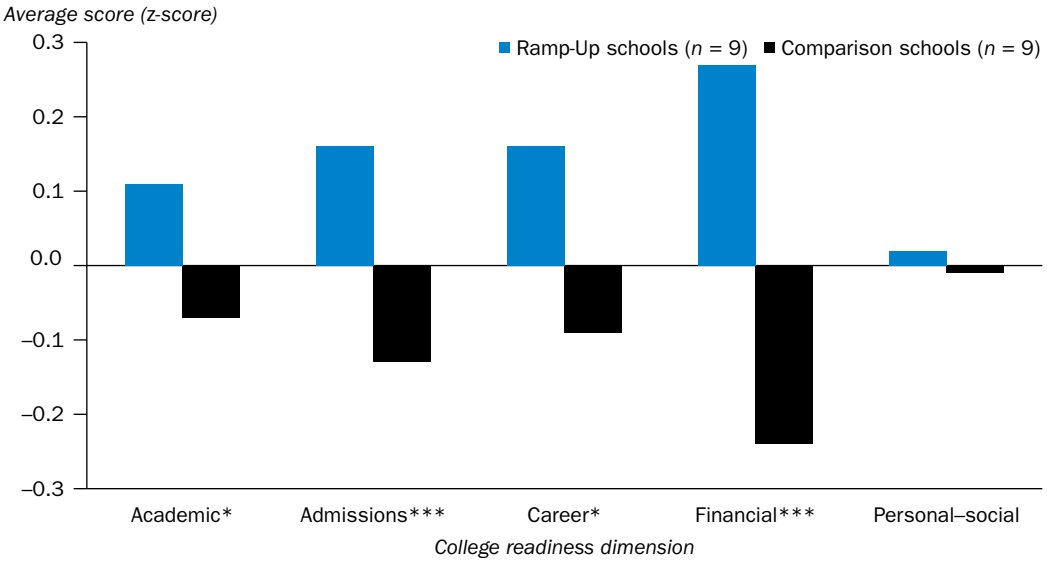


* Difference is significant at $p < .05$; ** difference is significant at $p < .01$; *** difference is significant at $p < .001$.

a. Calculated using responses from the student survey. One Ramp-Up school and one comparison school did not administer this survey.

Source: Authors' analysis of data from staff interviews and focus groups, staff and student surveys, and school- and student-level data from Minnesota Department of Education as described in appendix B.

Figure 3. Students in Ramp-Up to Readiness schools reported significantly more staff support for four of the five dimensions of college readiness than did students in comparison schools, 2013/14

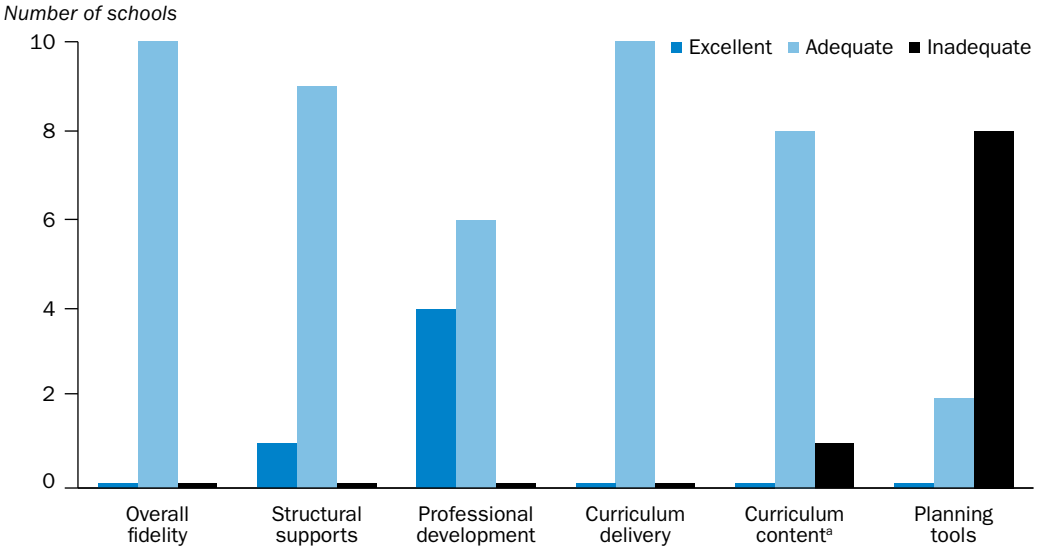


* difference is significant at $p < .05$; *** difference is significant at $p < .001$.

Note: Scores were calculated using standardized responses from the student survey. A *z*-score or standardized score is calculated by subtracting the mean score from each raw score and dividing by the standard deviation. This conversion allows for participants' responses to be aggregated when different scales are used. One Ramp-Up school and one comparison school did not administer the student survey.

Source: Authors' analysis of student survey data as described in appendix B.

Figure 4. For Ramp-Up to Readiness schools, overall implementation was adequate, but implementation scores varied by program component, 2013/14



Note: Cutpoint index scores demarking excellent, adequate, and inadequate implementation were set by the College Readiness Consortium at the University of Minnesota.

a. The indicators that constitute this component all come from the student survey; one of the 10 Ramp-Up schools was unable to administer that survey.

Source: Authors' analysis of data from staff interviews and focus groups, staff and student surveys, and information from the College Readiness Consortium at the University of Minnesota as described in appendix B.

Table 3. Fidelity of implementation scores overall and by component and subcomponent in Ramp-Up to Readiness schools, 2013/14

Component	Average fidelity score	Average fidelity classification	Range of scores (low to high)	Fidelity classification of 10 schools		
				Excellent	Adequate	Inadequate
Overall fidelity	70	Adequate	66–76	0	10	0
Structural supports	73	Adequate	61–90	1	9	0
Ramp-Up leadership team	84	Adequate	71–100	3	7	0
Ramp-Up coordinator	83	Adequate	56–100	4	5	1
Ramp-Up advisors	95	Excellent	75–100	8	2	0
Advanced courses	75	Adequate	67–100	1	9	0
Support for professional development	89	Adequate	50–100	6	3	1
Time to implement	54	Inadequate	26–97	1	3	6
Technology platform	34	Inadequate	16–100	1	0	9
Professional development	86	Adequate	74–96	4	6	0
For leadership and coordinator	93	Excellent	83–100	7	3	0
For teachers/advisors	78	Adequate	48 –97	3	6	1
Curriculum delivery	75	Adequate	60–87	0	10	0
Materials	85	Adequate	63–98	4	6	0
Information for advisory sessions/workshops	73	Adequate	58–84	0	9	1
Advisory sessions	76	Adequate	53–100	1	7	2
Workshops	65	Adequate	13–100	1	7	2
Curriculum content[a]	65	Adequate	48–72	0	8	1
Academic readiness	53	Inadequate	28–76	0	2	7
Admissions readiness	69	Adequate	44–96	2	3	4
Career readiness	75	Adequate	50–100	4	1	4
Financial readiness	44	Inadequate	25–75	0	2	7
Personal–social readiness	86	Adequate	71–92	3	6	0
Postsecondary planning tools	50	Inadequate	27–66	0	2	8
Use of postsecondary plan	61	Adequate	42–79	0	5	5
Use of readiness rubric	58	Inadequate	37–77	0	5	5
Parent communication	30	Inadequate	2–60	0	1	9

a. The fidelity scores for curriculum content are based on nine schools because one school was unable to administer the end-of-year survey,

Source: Authors' analysis of data from staff interviews and focus groups, staff and student surveys, and information from the College Readiness Consortium at the University of Minnesota as described in appendix B.

Establishing structural supports necessary for Ramp-Up. All 10 schools established the structural supports needed for Ramp-Up: 9 schools were rated adequate and 1 was rated excellent (see figure 4). School fidelity scores for this component ranged from 61 percent to 90 percent. Schools varied in their success at implementing subcomponents (see table 3).

- All 10 Ramp-Up schools were rated adequate in implementing three of the structural supports: developing a Ramp-Up leadership team, assigning staff to be Ramp-Up advisors, and establishing advanced courses.
- One school was rated inadequate in identifying a Ramp-Up coordinator. Scores for this subcomponent ranged from 56 percent to 100 percent.
- One school was rated inadequate in providing enough time and resources for professional development. Scores ranged from 50 percent to 100 percent.

- Six schools were rated inadequate in providing staff with enough preparation time prior to advisory sessions and workshops. Scores ranged from 26 percent to 97 percent.
- Nine schools were rated inadequate in establishing the technology platform needed to record, store, and report students' progress at following their postsecondary plans. Scores for this subcomponent ranged from 16 percent to 100 percent.

Providing Ramp-Up professional development. Participation in professional development by Ramp-Up leadership teams, coordinators, and advisors was rated excellent at four schools and adequate at six schools (see figure 4). School fidelity scores for this component ranged from 74 percent to 97 percent (see table 3).

- All 10 Ramp-Up schools offered adequate amounts of professional development for Ramp-Up leadership teams and coordinators. Scores on this subcomponent ranged from 83 percent to 100 percent.
- One of the 10 Ramp-Up schools was rated inadequate because it failed to provide Ramp-Up advisors with the recommended amount of professional development. Scores for this subcomponent ranged from 48 percent to 97 percent.

Fidelity scores show that all 10 schools implementing Ramp-Up did so adequately by the consortium's standards; however, some schools were unable to implement some components adequately

Delivering Ramp-Up curriculum. All 10 schools were rated adequate in delivering the curriculum component (scores ranged from 60 percent to 87 percent; see figure 4 and table 3). However, some schools struggled with some of the curriculum delivery subcomponents.

- Ramp-Up leadership teams and coordinators in all 10 schools were rated adequate in providing the necessary materials (scores ranged from 63 percent to 98 percent).
- One school was rated inadequate in providing teachers with the information they needed to lead advisory sessions and workshops (scores ranged from 58 percent to 84 percent).
- Two schools were rated inadequate in implementing enough advisory sessions or did not schedule enough time for advisory sessions (scores ranged from 53 percent to 100 percent).
- Two schools were rated inadequate in implementing the workshops (scores ranged from 13 percent to 83 percent).

Covering the curriculum content. One of the nine schools assessed on this component did not adequately provide the curriculum content, and the remaining eight schools covered the curriculum adequately (see figure 4). Only nine schools were assessed on this component because the data came from responses to the student survey and one school was unable to administer that survey. The fidelity scores ranged from 48 percent to 74 percent (see table 3). Analyses of curriculum content subcomponents revealed schools' success at working with students on each of the five dimensions of college readiness.

- Two schools were rated adequate in their support of students' academic readiness (scores ranged from 28 percent to 76 percent).
- Five schools were rated adequate in their support of students' admissions readiness (scores ranged from 44 percent to 96 percent).
- Five schools were rated adequate in their support of students' career readiness (scores ranged from 50 percent to 100 percent).
- Two schools were rated adequate in their support of students' financial readiness (scores ranged from 25 percent to 75 percent).
- All schools were rated adequate in their support of students' personal–social readiness (scores ranged from 71 percent to 92 percent).

Using postsecondary planning tools. The implementation data suggest that the last component—use of postsecondary planning tools—was the most difficult for schools to implement, with just 2 of 10 schools rated adequate and the remainder rated inadequate (see figure 4 and table 3). Fidelity scores ranged from 27 percent to 66 percent. These difficulties were apparent for all three subcomponents. Schools scored lowest on the subcomponent of parental communication, suggesting that most schools had a hard time involving parents in conversations about college planning.

- Five schools adequately used the postsecondary plan (scores ranged from 42 percent to 79 percent).
- Five schools adequately used the readiness rubric (scores ranged from 37 percent to 77 percent).
- Nine schools were rated inadequate in communicating with parents, and the remaining school was just barely rated adequate in its communication with parents (scores for the 10 schools ranged from 2 percent to 60 percent).

The implementation data suggest that use of postsecondary planning tools was the most difficult component for schools to implement

Staff from Ramp-Up schools mentioned six general strengths of the program, four general weaknesses, and two challenges to implementation

Responses to open-ended survey items from 123 staff in the 10 Ramp-Up schools revealed several common themes related to program strengths and weaknesses (see appendix C for further details).

Ramp-Up's strengths. The most frequently mentioned strengths were:

- The structure of the Ramp-Up curriculum (37 percent).
- Ramp-Up's delivery model (advisory sessions and workshops; 9 percent).
- Clear directions on how to facilitate advisory sessions and workshops with objectives, lists of additional aligned resources, and opening and closing reflections on each advisory session and workshop in the advisor's guide (8 percent).
- The practicality of the lessons, particularly on academic and financial readiness (7 percent).
- The reliance of advisory sessions and workshops on discussion as a key form of instruction (5 percent).
- Useful information about postsecondary planning (4 percent).

Ramp-Up's weaknesses. The main weaknesses of Ramp-Up according to school staff were:

- The inability of Ramp-Up content and materials to connect with students (15 percent).
- Difficulty of students in rural communities to relate to the program's focus on four-year institutions rather than two-year or technical degree programs that offer training in highly specialized skills that are in high demand in industries in rural areas (14 percent).
- Poor production quality of videos used in advisory sessions (7 percent). In some instances the quality of the videos became the topic of conversation during sessions, rather than the content.
- Other weaknesses were that some lessons were misaligned with grade level or the time in the academic year and some advisory sessions took less than the allotted 30 minutes.

Implementation challenges. Analysis of open-ended survey items and transcripts from focus groups at the 10 Ramp-Up schools revealed two major implementation challenges:

finding time in the school schedule for Ramp-Up advisory sessions and workshops, and achieving buy-in by school staff.

Ramp-Up's delivery model relies on 28 weekly advisory sessions of 30 minutes each and five workshops of 45–60 minutes for each grade level. In focus groups for 5 of the 10 Ramp-Up schools, staff reported difficulty completing the weekly advisory sessions in 30 minutes. Staff commented that the Ramp-Up advisory sessions were bound to the time established for school homeroom periods. In two schools, because of schoolwide scheduling, the advisory session was confined to a shorter period: in one school the advisory period was 15 minutes and in another it was 22 minutes. Ramp-Up advisors at these schools split the advisory materials into two or three periods to cover the lesson. Focus group participants from three schools reported that their school's homeroom periods also had to include other activities, reducing the amount of time for Ramp-Up activities. They noted that these challenges were not related to Ramp-Up, but rather to logistical issues beyond the control of the advisors.

Staff in Ramp-Up schools confirmed that obtaining teacher and staff buy-in was a challenge

Staff in Ramp-Up schools confirmed that obtaining teacher and staff buy-in was a challenge. Focus group participants in half the Ramp-Up schools mentioned that staff buy-in was difficult because staff were weary of yet another added responsibility and frustrated about having to teach material outside their areas of expertise.

Implications of the study findings

The findings from this study may have implications for multiple audiences, including state policymakers and school and district administrators seeking programs to improve high school students' readiness for college, district, and school staff already implementing Ramp-Up, consortium staff seeking ways to improve the program, and parents wanting more information on activities to instill college readiness in students.

Staff in comparison schools continued to take the traditional approach to college readiness, which involves offering optional college-oriented supports or college-level courses to students who identify as college-bound and having a guidance counselor inform those students of separate programs for which they are eligible. Staff in Ramp-Up schools provide a greater emphasis on college readiness through the program's developmental and collective approach.

Despite the challenges associated with implementation of Ramp-Up (such as asking staff to take on additional responsibilities and changing beliefs about students' need for postsecondary education), Ramp-Up schools were able to implement the program with adequate fidelity. School and district administrators who are considering adopting Ramp-Up can do so with confidence that their high schools can implement the program during the first year.

Before deciding whether to adopt Ramp-Up, school and district administrators may want to consider the feedback from staff at schools that implemented the program. Focus group members, interviewees, and survey respondents from the 10 Ramp-Up schools in this study indicated that the structure, curriculum, tools, and delivery model were strengths of the program. However, they also stated that not all students were able to relate to the information provided in the advisory sessions and workshops. Many students in rural schools did not connect with Ramp-Up's messages that failed to address readiness for two-year institutions. Indeed, recent regional and national research shows that rural high school graduates

enroll in two-year colleges at a higher rate than their nonrural peers (Burke, Davis, & Stephan, 2015; Byun, Meece, & Irvin, 2012; Hu, 2003). The poor production quality of some curriculum materials also impeded students from connecting with their messages. Feedback from school staff highlights the importance of providing sufficient time for advisory sessions and workshops in school schedules.

Ramp-Up trainers should note that schools struggled to implement certain subcomponents, such as providing time for Ramp-Up advisors (teachers) to prepare for advisory sessions and workshops, developing a technology platform capable of storing students' postsecondary plans and showing students' success at executing those plans, conveying appropriate levels of information on academic and financial readiness to students, and helping students develop postsecondary plans and communicate with parents about those plans. Although these subcomponents were discussed in the professional development for Ramp-Up coordinators and leadership teams, and were presented in the advisors' guides, they may require additional emphasis during the trainings.

Because even schools that emphasize college readiness—such as those implementing Ramp-Up—may neglect to keep parents adequately informed about students' level of readiness for college, parents may need to initiate the communication with school staff about their child's progress.

Because even schools that emphasize college readiness may neglect to keep parents adequately informed about students' level of readiness for college, parents may need to initiate the communication with school staff about their child's progress

Limitations of the study

This study has three limitations that should be kept in mind when reviewing its findings.

First, the findings may not generalize to other types of schools. Schools that were recruited into this study were more likely to be located in rural areas, served student populations that were less racially/ethnically diverse, and had higher average achievement than the population of public high schools in Minnesota did. While the discrepancy between the sample and population would typically suggest that findings cannot be generalized to many other Minnesota schools, schools located in two of Minnesota's major urban areas were ineligible for the study because they were committed to other college readiness programs. Thus, the findings may be more generalizable to Minnesota schools that are eligible to implement Ramp-Up than would be indicated by comparing the sample with the total population of high schools. For schools outside of Minnesota wishing to use these findings, school and district administrators may want to see how similar the sample is to their school.

Second, the study team worked closely with schools to obtain all available data, but not all data could be obtained. For example, data may have been unavailable for students who switched schools and for schools that had not administered the ACT PLAN or EXPLORE assessments in grades 8 and 10 or recorded the scores (see appendix B). These missing data prevented comparisons between subgroups within Ramp-Up schools and generally made analysis of data less reliable. In addition, two schools in the study did not administer the student survey. Thus, even though variables that were missing for more than 40 percent of the sample were excluded from the analysis, results need to be interpreted with caution.

Third, while the study team was able to examine student observations of staff support for the five dimensions of college readiness, they were unable to perform the planned analysis

of the numbers of students exposed to Ramp-Up programming and the amount of time in which students in Ramp-Up schools engaged in Ramp-Up activities (that is, saturation). Teachers were supposed to estimate the time spent in advisory sessions and workshops on instructional logs following each workshop. By the time these data were collected, however, most schools had completed their workshops, and any time estimates made at that point would have been made well after the fact and thus would be less reliable. Future research can verify whether students in Ramp-Up schools are receiving the expected amount of exposure to college readiness supports.

Appendix A. Background information on college readiness

To provide background for understanding the approach used by Ramp-Up to Readiness™ to improve college readiness, this appendix summarizes related literature. Findings from correlational research that examines the predictors of college success are described first, followed by findings from reports on rigorous impact studies of college readiness interventions, including what the studies identified as barriers and facilitators of high-fidelity implementation. Finally, contextual information is provided on recent initiatives aimed at improving college readiness in Minnesota.

Predictors of postsecondary education achievements

College readiness is often defined as the level of preparation needed to enroll and succeed in credit-bearing college classes (Achieve, 2013; ACT, 2007; Conley, 2011). The College Readiness Consortium at the University of Minnesota, which developed Ramp-Up, hypothesizes that the program will increase college enrollment and success by improving outcomes in four intermediate domains that prior research has indicated relate to college success: academic achievement, advanced coursework, college-enrollment actions, and personal and social college readiness. This section describes the previous literature related to each of these domains.

Academic achievement. Research indicates that high school academic achievement predicts multiple college outcomes. High scores on standardized tests relate positively to enrolling in four-year colleges (Perna, 2000; Perna & Titus, 2005; Plank & Jordan, 2001; Roderick, Nagaoka, & Allensworth, 2006; Stephan, Rosenbaum, & Person, 2009; Wyatt, Kobrin, Wiley, Camara, & Proestler, 2011) and college persistence (ACT, 2005; Horn & Kojaku, 2001; Warburton, Bugarin, & Nuñez, 2001; Wyatt et al., 2011). A high school grade point average (GPA) correlates positively with enrolling in college (Roderick et al., 2006; Stephan et al., 2009), achieving a high college GPA (Kobrin, Patterson, Shaw, Mattern, & Barbuti, 2008; Kuh, Curce, Shoup, Kinzie, & Gonyea, 2008; Wolniak & Engberg, 2010), and obtaining a degree (Bowen, Chingos, & McPherson, 2009). High school GPA, unlike college admissions exams, lacks common meaning across schools, but it may reflect study skills, work habits, or effort not captured by test scores (Roderick et al., 2006). Previous studies have found that high school GPA is a stronger predictor of (that is, explains more variation in) college enrollment, college GPA, or college graduation than ACT or SAT test scores (Bowen et al., 2009; Hoffman, 2002; Roderick et al., 2006; Zwick & Sklar, 2005). Using a combination of test scores and GPA may yield a more accurate prediction of college achievement than using either one alone (Bowen et al., 2009; Kobrin et al., 2008; Zwick & Sklar, 2005).

Advanced coursework. Beyond overall measures of academic achievement, the academic intensity, or rigor, of students' coursework during high school predicts college outcomes (Adelman, 2006; Horn & Kojaku, 2001; Ishitani, 2006; Roderick et al., 2006; Warburton et al., 2001). Indeed, some argue that taking rigorous high school courses is one of the best predictors of college success (Adelman, 2006; Rose & Betts, 2001). Enrolling in advanced coursework during high school predicts multiple measures related to college success. Advanced Placement courses are positively correlated with college readiness (Speroni, 2011; Tierney et al., 2009), and participation in dual-credit programs predicts enrolling in college (Karp, Calcagno, Hughes, Jeong, & Bailey, 2008; Speroni, 2011) and persisting in

obtaining a degree (Karp et al., 2008). Some students with access to rigorous courses do not take them, but information, guidance, and support from school staff and parents may increase the likelihood that students will enroll in advanced courses (Lareau & Weininger, 2008; McDonough, 1997; Yonezawa, Wells, & Serna, 2002). In Minnesota students have multiple opportunities for enrolling in advanced coursework while in high school. In addition to honors, Advanced Placement, and International Baccalaureate classes, students can take dual-enrollment classes and classes that lead to occupational certificates. Some of these classes (such as Advanced Placement, International Baccalaureate, and some dual-enrollment classes) are targeted primarily at students in grades 11 or 12, while others (such as pre–International Baccalaureate, pre–Advanced Placement) target students in grades 9 or 10 or students at all grade levels (for example, honors).

College enrollment actions. Completing key college enrollment actions during high school reflects students' college knowledge and predicts college enrollment (Conley, 2011). Successfully navigating the complex and unpredictable procedures of financial aid or four-year college admissions requires students to make plans and take actions that require knowledge and assistance (McDonough, 1997; Roderick et al., 2008; Stephan & Rosenbaum, 2009; Tierney et al., 2009). Students who take college admissions exams, complete multiple applications, or submit the Free Application for Federal Student Aid (FAFSA) are more likely to enroll in college, specifically in a four-year college, but not all students who plan to attend college complete these actions (Avery & Kane, 2004; Plank & Jordan, 2001; Roderick et al., 2008; Stephan & Rosenbaum, 2013). The FAFSA, in particular, appears to be a stumbling block for some students. Many studies have identified completion of the FAFSA as a barrier to college enrollment (Advisory Committee on Student Financial Assistance, 2005; Dynarski & Scott-Clayton, 2006; Kantrowitz, 2011; King, 2006; Roderick et al., 2008; Stephan & Rosenbaum, 2013), and increasing FAFSA completion rates is the goal of a recent federal initiative that provides FAFSA completion information to high schools (May, 2012).

Personal and social college readiness. Measures of personal readiness also relate to college readiness. In a meta-analysis of 109 studies, Robbins et al. (2004) found that academic goals, academic self-efficacy, and academic skills (such as study, time-management, problem-solving, and communication skills) correlated moderately with college retention, and such psychosocial and study skill factors predicted college retention after accounting for student socioeconomic status, standardized achievement, and high school GPA (see also Conley [2011] and Lippman, Atienza, Rivers, & Keith [2008]). Research suggests that students' context can impact these types of factors (Farrington et al., 2012). Some prominent policymakers and researchers have called for a greater focus on understanding, measuring, or improving these factors (Duncan, 2013; Farrington et al., 2012; Heckman & Rubinstein, 2001), although identifying a reliable measure of such factors may be a barrier (Heckman & Rubinstein, 2001).

Many youths have unrealistic expectations or limited knowledge about the education, skills, and attitudes that jobs require (Reynolds, Stewart, MacDonald, & Sischo, 2006; Rosenbaum, 2001; Schneider & Stevenson, 1999). For example, in a nationally representative sample, Schneider and Stevenson (1999) found that less than half (43.7 percent) of high school students had education expectations aligned with their occupational aspirations. Researchers have suggested that students who understand occupational pathways and the link between efforts in high school and the achievement of occupational goals

will be more motivated, will make educational choices consistent with their plans (such as taking advanced science courses in high school to achieve an occupation in health), and may ultimately have improved college outcomes (Arora, Schneider, Thal, & Meltzer, 2011; Schneider & Stevenson, 1999; Rosenbaum, 2001). Although the evidence is limited, high education expectations aligned with occupational ambitions or having specific occupational plans during high school are associated with relatively higher educational attainment or wages in adulthood (Sabates, Harris, & Staff, 2011; Staff, Harris, Sabates, & Briddell, 2010). Schools or interventions may be able to foster students' career readiness by providing information, help, or experiences related to developing a career plan (Arora et al., 2011; Rosenbaum, 2001; Schneider & Stevenson, 1999).

College readiness interventions and evidence of their effectiveness

Although many college readiness interventions exist, relatively few have been studied using rigorous methods (Tierney et al., 2009). College readiness interventions provide a large range of supports, and the evidence from rigorous evaluations shows mixed impacts. This evidence does indicate, however, that interventions can affect students' readiness for college.

In a review of 16 studies of 10 college readiness programs or policy interventions that met the What Works Clearinghouse standards for evidence (with or without reservations), Tierney et al. (2009) found that five programs had positive effects on college readiness (Career Beginnings, Talent Search, Sponsor-a-Scholar, Talent Development High School, and the H&R Block FAFSA experiment). Three of these interventions showed significant effects after one year or less. Positive effects were found on FAFSA completion (two studies), college enrollment (four studies), academic course taking (one study), and an increase in high school completion (one study). Across the evaluations with significant impacts, treatment effects were 4.7–18 percentage points for college enrollment (Bettinger, Long, Oreopoulos, & Sanbonmatsu, 2009; Constantine, Seftor, Martin, Silva, & Myers, 2006; Cave & Quint, 1990; Johnson, 1999) and 15.7–27 percentage points for FAFSA completion (Bettinger et al., 2009; Constantine et al., 2006). Few evaluations examined measures of course taking, but the Talent Development intervention was related to a 9.7-percentage-point increase in grade 9 students completing a basic academic curriculum after one year (Kemple, Herlihy, & Smith, 2005). In a more recent meta-analysis that included 14 studies of 12 college readiness programs (seven of which were also included in the What Works Clearinghouse review), Harvill, Maynard, Nguyen, Robertson-Kraft, and Tognatta (2012) found average increases of 12 percentage points in college enrollment and 4 percentage points for studies that used a randomized controlled trial design.

Four recently completed randomized controlled trial studies investigated the impacts of short-duration college readiness programs but were not included in the aforementioned research reviews. These studies indicate that counseling interventions lasting one year or less and targeting students in grade 11 or later can increase the rates of taking the SAT, completing college and financial aid applications, and enrolling in college (Avery, 2010; Bos, Berman, & Kane, 2012; Castleman, Arnold, & Wartman, 2012; Hoxby & Turner, 2013).

In a What Works Clearinghouse practice guide, Tierney et al. (2009) identified strategies of successful programs and made five recommendations to high schools for improving college

readiness: offering and informing students about a college preparatory curriculum, using assessments to inform students about their level of college preparation, providing social support for college, assisting students with key college-enrollment actions, and increasing families' financial awareness and helping students apply for financial aid.

College readiness interventions for less-advantaged students

Many college-access interventions are directly targeted at students with fewer college-related resources (for example, first-generation college students and students from low-income households; see summaries in Tierney et al., [2009]). Students from low-income households or students whose parents did not attend college are least likely to have college knowledge, take key college actions, or receive assistance in the enrollment process (Avery & Kane, 2004; Lareau & Weininger, 2008; McDonough, 1997). These students also have less access to academic opportunities that help ensure readiness for college (Roderick et al., 2006) and have the lowest college enrollment rates (Bozick & Lauff, 2007). Evidence from correlational and experimental studies indicate that less-advantaged students benefit more from college readiness interventions (Bos et al., 2012; Hoxby & Turner, 2013; Myers, Olsen, Seftor, Young, & Tuttle, 2004; Stephan & Rosenbaum, 2013).

Less is known about differences in college readiness for students in rural versus nonrural locales. However, prior research has found that rural students aspire to four-year colleges, enroll in any college, or complete bachelor's degrees at lower rates than urban students do (Byun et al., 2012; Hu, 2003). Nationally, college-enrollment rates are lower for rural students (27 percent) than for students from cities (37 percent), suburbs (37 percent), or towns (32 percent). Further, smaller percentages of rural adults earn bachelor's degrees (13 percent) or graduate or professional degrees (7 percent) than their urban counterparts (17 percent of whom earn bachelor's degrees and 10 percent of whom earn graduate or professional degrees; Provasnik et al., 2007), a difference that may relate to socioeconomic differences by locale (Byun et al., 2012).

Implementation studies of college readiness interventions

Few studies have systematically assessed the fidelity with which college readiness interventions have been implemented. Studies have suggested, however, that several factors may relate to implementation fidelity, including staff or school resources (staff time, expertise, and turnover or the availability of student services), professional development opportunities, and commitment to implementation (Cahalan, Silva, Humphrey, Thomas, & Cunningham, 2004; Kemple et al., 2005; Schirm, Stuart, & McKie, 2006). Authors of one evaluation (Cave & Quint, 1990) indicated that the differences in the college readiness services received by treatment and control students was smaller than expected, and members of Regional Educational Laboratory (REL) Midwest's Technical Working Group also raised questions about the extent to which college supports may differ across schools, given the large number of college readiness programs. While some information is available on the implementation of college readiness interventions, it is limited overall and even more limited for interventions at the school level.

College readiness in Minnesota

Among REL Midwest states Minnesota has the highest rates of high school graduation (86.2 percent) and college enrollment (69.2 percent; National Center for Higher Education Management Systems, 2008, 2009). However, 29 percent of recent high school graduates in Minnesota did not enroll in college directly after high school, and college enrollment rates are significantly lower for some student groups (Minnesota Office of Higher Education, 2012). Moreover, the demand for college-educated workers is predicted to be greater by 2018 in Minnesota than in any other midwestern state (Carnevale, Smith, & Strohl, 2010). College readiness interventions that increase the number of students enrolling in and completing college could help Minnesota extend college opportunities to more students and meet the high demand for college-educated workers.

Minnesota has demonstrated its interest in improving college readiness with two recent initiatives. First, it created the Minnesota Statewide Longitudinal Education Data System, a collaboration of Minnesota education and workforce agencies. Minnesota's Statewide Longitudinal Education Data System has recently acquired National Student Clearinghouse data and can provide the public with college enrollment rates by high school. The release of these enrollment rates may, according to some College and Career Success Research Alliance members, put increased pressure on schools to demonstrate that they are preparing students for college enrollment and success. Second, in September 2013, Minnesota's legislature passed a bill that requires public schools to assist students in grade 9 and beyond to develop college plans and update those plans on a continual basis.

Schools in Minnesota, like schools in other REL Midwest states, provide a variety of college readiness programs, including federally funded programs administered by the U.S. Department of Education to assist students from disadvantaged backgrounds; for example, Upward Bound, the Talent Search Program, and Gaining Early Awareness and Readiness for Undergraduate Programs (GEAR UP). In addition, local programs, including the locally well-known College Possible (formerly Admission Possible), are targeted to particular groups of students or have a limited focus. College Possible, used mostly in urban schools, assists a small group of students within a school, and focuses specifically on college actions such as admissions exam preparation, campus visits, and completion of college and FAFSA applications (see www.collegepossible.org). Ramp-Up, in contrast, is a schoolwide intervention that can be used in conjunction with targeted college readiness programs for students who may need additional help.

Appendix B. Study data and methodology

This appendix describes methods used in the study, including data sources, data collection, and analytic methods for each research question. Information is also provided on the analytic sample and missing data.

Description of data

Data sources. The study team collected different types of quantitative and qualitative data. The data sources are matched with each research question in table B1.

School- and student-level data. The following student records were requested from the 20 schools participating in the Ramp-Up implementation study:

- *Grade level.* Data for students in grades 10–12 during the 2013/14 school year.
- *College readiness indicator scores.* Students' EXPLORE, PLAN, ACT, and SAT scores and dates of administration. Dates of administration varied depending on students' current grade and the test taken. The EXPLORE and PLAN are standardized tests from ACT that measure student progress toward college and career readiness. In Minnesota, these exams are typically administered in grades 8 (EXPLORE) and 10 (PLAN). Each assessment has sections for English, math, reading, and science, and ACT has developed college readiness benchmarks for each exam. The ACT and SAT are college entrance exams generally taken in grade 11 or 12.
- *Demographic characteristics.* Measures included race/ethnicity, gender, eligibility for the school lunch program (an indicator of living in an economically disadvantaged household), eligibility for having an individualized education program (an indicator of having special needs), and English learner student status.

Table B1. Crosswalk showing data used to address each research question

Research question	Data source
1. What are the characteristics of the schools implementing Ramp-Up to Readiness compared with schools in the study not implementing it and with schools in the state at large?	1. Minnesota Department of Education data center for: · School-level Minnesota Comprehensive Assessment-II and Minnesota Comprehensive Assessment-III data · School-level graduation rates · School-level ACT composite data 2. National Center for Education Statistics' Common Core of Data (for school locales) 3. Student-level data from schools
2. How does Ramp-Up differ from college-related supports in other schools?	1. Ramp-Up implementation manuals 2. Staff interviews and focus groups 3. Staff survey 4. Student survey
3. To what extent did schools implement the core components of Ramp-Up as intended by the College Readiness Consortium at the University of Minnesota?	1. Schools' implementation planning documents (shared by the consortium) 2. Staff survey 3. Student survey
4. What do school staff in Ramp-Up schools perceive as the strengths and weaknesses of its curriculum, tools, and professional development, and which aspects of Ramp-Up did they consider more difficult to implement and why?	1. Staff focus groups 2. Staff surveys

- *Test scores on Minnesota's accountability assessments.* Students in Minnesota are required to take the Minnesota Comprehensive Assessment (MCA) series II in math and reading in grades 3–8, and high school students take another MCA-II reading test in grade 10 and an MCA-II math test in grade 11. Students are also required to take the MCA-III in science in grades 5, 8, and 11. Grade 8 MCA-II scores, grade 10 MCA-II scores, and grade 11 MCA-III scores (where available) were collected for students in the sample (those in grades 10–12 in the 2013/14 school year). Grade 8 scores were often stored at middle schools, and in some cases obtaining them proved challenging (the rates of missing data in the analytic sample are shown in table B4).
- *Enrollment in advanced courses by term and grade point average (GPA).* In Minnesota, advanced courses are listed in Minnesota's Common Course Catalog by type (types A–E). The number of advanced courses taken by students represents the sum of advanced courses taken during the 2012/13 and 2013/14 school years. For students in schools that submitted valid data for these variables, missing values were considered to be no courses taken. Cumulative GPA as of the spring of the 2012/13 school year was collected for all students in the study. For students in schools that did not submit valid data for these variables, these variables were recorded as missing.
- *Number of transcripts requested for college applications (grade 12 only).* This measure was used as a proxy for the number of college applications submitted by grade 12 students during the 2013/14 school year.
- *Minnesota Automated Reporting Student System (MARSS) number.* This is the unique student identification number assigned to students by the Minnesota Department of Education. Students' MARSS numbers were used to connect records provided by schools and to allow for matching with Minnesota Department of Education records.

The following school-level data were collected from the Minnesota Department of Education website:

- Four-year graduation rates.
- Average MCA test scores.
- Demographic composition of enrolled students (such as percentage representing different racial/ethnic groups and percentage eligible for the school lunch program).

Schools' locale classifications were gathered from the National Center for Education Statistics' Elementary and Secondary Information System (U.S. Department of Education, 2014). These locale codes are based on the U.S. Census Bureau's urban-centric classification system (http://nces.ed.gov/ccd/commonfiles/localedescription.asp). The codes are:

- 11 City, large
- 12 City, mid-sized
- 13 City, small
- 21 Suburb, large
- 22 Suburb, mid-sized
- 23 Suburb, small
- 32 Town, fringe
- 32 Town, distant
- 33 Town, remote
- 41 Rural, fringe
- 42 Rural, distant
- 43 Rural, remote

For this study, codes of 41, 42, and 43 were used to signify rural locales and all other codes to signify nonrural locales.

Student survey. In spring 2014 information from students in Ramp-Up and comparison schools was gathered using a 10- to 15-minute online survey. Thirty students in each of grades 10–11 were randomly selected and all students in grade 12 were selected from each school to take the survey. The student survey was designed to help the research team understand schools' fidelity of implementation and the contrast between the college readiness supports in schools implementing Ramp-Up and the comparison schools.

Interviews. In early spring 2014, the study team interviewed the person within each Ramp-Up and comparison school that was most knowledgeable about the schools' college readiness activities. The primary purpose of these 60-minute interviews was to identify the range of college readiness supports provided in high schools and to determine baseline levels of college readiness supports in each school. In Ramp-Up schools, someone from the Ramp-Up leadership team (an administrator, a teacher, or a counselor) or the Ramp-Up coordinator typically served as the interviewee. For each dimension of college readiness, the project team asked interviewees to list all formal or informal programs (for example, Upward Bound), services (for example, college counseling), activities (for example, college tours), and resources (for example, college software) available to students through their schools that aim to make students more college ready. The specific programs, services, activities, and resources were labeled "core college readiness elements of support," and the questions for the focus groups (described below) specifically asked about these elements. Interviewers also asked staff about school culture as it relates to college readiness and potential (or actual) barriers to implementing a schoolwide college readiness program. All interviews were audio recorded with permission from the participants and transcribed for analysis.

School documents. School documents were collected from the College Readiness Consortium at the University of Minnesota and all participating schools in spring of 2014. To help assess the fidelity of implementation, the following school documents were requested from the consortium: the annual implementation plan, which indicates the activities that Ramp-Up schools plan to complete; the curriculum calendar, which the Ramp-Up coordinator submits to the consortium before the school year begins; and participation rates of school staff in professional development. To better understand the contrast between Ramp-Up and comparison schools, the study team requested that schools provide existing documentation regarding programs and activities related to college readiness (for example, a calendar showing scheduled college readiness activities such as a financial aid night or college fair). The specific documents were identified through interviewees' responses to interview questions about college readiness elements in their school.

Focus groups. In each of the participating Ramp-Up and comparison schools, the study team convened a focus group of between two and nine staff members. For Ramp-Up schools, focus group participants included members of the Ramp-Up leadership team, the Ramp-Up coordinator, and others who were involved in college readiness activities in the school. In comparison schools, focus group participants included an administrator, a guidance counselor, and other staff who were most involved in college readiness activities in the school.

The May 2014 focus groups collected data to measure the contrast between Ramp-Up and the college readiness supports offered in comparison schools. For each element identified in the spring interviews, participants were asked about its accessibility, frequency, and

duration as it related to each of the college readiness dimensions in the Ramp-Up program (academic, admissions, career, financial, and personal–social readiness). The focus groups also gathered information about the fidelity of implementation in Ramp-Up schools by asking about which core elements of the Ramp-Up program were implemented and what enabled or prevented quality implementation.

Following group members' responses to each question, facilitators summarized the collective opinion of group members and verified whether that summary was correct. This process later helped coders interpret focus group members' responses to questions.

Focus groups were planned for 60 minutes in comparison schools and 90 minutes in Ramp-Up schools because school staff implementing Ramp-Up received additional questions. All focus groups were audio recorded with permission from participants and transcribed for analysis. Each participant received a $25 gift card to Amazon.com.

Staff survey. In spring 2014, all teachers in the Ramp-Up schools, in addition to the Ramp-Up leadership team, were asked to complete a 20- to 30-minute online staff survey. This 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 Ramp-Up. For participating in the survey, each respondent received a $25 gift card to Amazon.com.

Selecting schools to participate in the Ramp-Up implementation study

The consortium conducted information sessions about the Ramp-Up program throughout Minnesota in the spring of 2013. At the end of these presentations, schools were invited to complete an application to implement the Ramp-Up program without cost. For the 20 schools that applied, the consortium selected schools based on the following procedure. First, schools were placed into one of five blocks based on size, average test scores, percentage of students eligible for the school lunch program, and locale. Then half the schools in each block were randomly assigned to one of two groups: 10 schools to implement Ramp-Up during the 2013/14 school year and the other 10 to implement the program the following year. The comparison schools in the delayed implementation group received $1,500 each as compensation for the data-collection burden.

Analytic sample. Ten Ramp-Up schools and 10 comparison schools were included in the analysis. Data were collected on a total of 6,654 students: 3,198 students in Ramp-Up schools and 3,456 students in comparison schools. For Ramp-Up schools, the average number of students in grades 10–12 was 320 and ranged from approximately n = 50 to n = 1,000. For comparison schools, the average number of students in grades 10–12 was 346, ranging from approximately n = 120 to n = 900 (table B2).[4]

Table B2. Average number of students in grades 10–12 and total sample size, by Ramp-Up to Readiness study group, 2013/14

School code	Grade 10	Grade 11	Grade 12	Total
Ramp-Up schools[a]	1,081	1,094	1,021	3,198
Comparison schools	1,374	1,085	997	3,456
Total schools	2,455	2,179	2,018	6,654

a. Two students in a Ramp-Up school were missing data on grade level. These students are reflected in the total for the school.

Source: Authors' analysis of student samples in Ramp-Up and comparison groups of schools.

Survey response rates

Student survey. Sixty three percent of students completed the survey (1,728 of 2,744 eligible students).[5] Two schools (one from the Ramp-Up group and one from the comparison group) failed to administer the student survey to any students by the end of the school year, and the students from those schools were not included in calculations of response rates for the survey. Among Ramp-Up schools the average school response rate was 51.5 percent, ranging from 26.7 percent to 96.9 percent. Among comparison schools, the average school response rate was 73 percent, ranging from 35.1 percent to 96.9 percent (table B3).

Staff survey. All staff in Ramp-Up schools who played a role in delivering the Ramp-Up program to students were invited to complete a survey assessing their perceptions of the program in their school. Of the 183 staff in the 10 Ramp-Up schools invited, 127 (69.4 percent) completed the survey. School response rates on the staff survey ranged from 57.1 percent to 84.6 percent (see table B3). This survey was not administered to staff in comparison schools.

Missing data

Rates of missing data varied. Missing data rates for demographic variables were lower, while the rates for academic achievement variables were higher. Data were missing from the sample for several reasons: the variable requested was not submitted by a school, not all student scores were submitted for specific variables (such as Minnesota Comprehensive

Table B3. Student survey, student personal readiness inventory, and staff survey response rates, by Ramp-Up to Readiness study group and school, 2013/14

	Student survey[a]		Staff survey[b]	
Study group	Number of respondents	Percent of respondents	Number of respondents	Percent of respondents
Ramp-Up schools	659	51.5	127	69.4
Comparison schools	1,134	73.0	na	na
Total	1,728	62.9	127	69.4

na is not applicable (school staff at comparison schools were not asked to take the staff survey).

a. Totals are based on nine Ramp-Up and nine comparison schools that administered the student survey.

b. Administered only to staff in the Ramp-Up schools.

Source: Authors' analysis based on response counts from the student survey, personal readiness inventory, and staff survey.

Assessment [MCA] scores), or certain variables did not apply to students in certain grades (such as the number of transcripts requested, a proxy for submitting college applications). Data for variables missing from 40 percent or more of students were not included in the analyses. For the comparison schools, these variables included MCA grade 10 reading scores, MCA grade 8 reading scores, MCA grade 8 science scores, MCA high school science scores, EXPLORE scores, and PLAN scores. For analysis of the Ramp-Up schools, these variables include MCA grade 8 science scores, MCA high school science scores, EXPLORE scores, and PLAN scores (table B4).

Approval for data collection

All study materials were reviewed and approved by American Institutes for Research 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.

Table B4. Rates of missing school- and student-level data in the analytic sample by Ramp-Up to Readiness study group, 2013/14

	Ramp Up schools			Comparison schools		
Variable	Number of schools	Number of students	Percent of data missing	Number of schools	Number of students	Percent of data missing
Gender	10	2,909	9.0	10	3,409	1.4
Race/ethnicity	10	2,852	10.8	10	3,396	1.7
Grade level	10	3,198	0.0	10	3,456	0.0
English language learner student	8	2,299	21.7	10	3,456	0.0
Individualized education program[a]	10	3,198	0.0	10	3,456	0.0
School lunch program eligibility	10	2,971	7.1	9	3,332	3.6
Advanced coursework	8	2,628	17.8	8	2,443	29.3
Transcripts (grade 12 only)	7	836	18.1	6	425	57.4
Took ACT or SAT (grades 11 and 12 only)	8	1,973	6.7	8	1,408	32.4
Minnesota Comprehensive Assessment grade 10 reading score	9	2,250	29.6	9	1,744	49.5
Minnesota Comprehensive Assessment grade 8 math score	10	2,002	37.4	9	2,078	39.9
Minnesota Comprehensive Assessment grade 8 reading score	10	2,062	35.5	9	1,692	51.0
Minnesota Comprehensive Assessment grade 8 science score	8	1,277	60.1	8	1,286	62.8
Minnesota Comprehensive Assessment grade 11 science score	8	552	82.7	7	54	98.4
Cumulative unweighted grade point average[b]	8	1,958	38.8	7	2,588	25.1
EXPLORE score	4	875	72.6	5	694	79.9
PLAN score	8	1,508	52.8	8	1,418	59.0

Note: For transcripts, rates of missing data are based on the number of grade 12 students in Ramp-Up (1,021) and comparison schools (997). For the indicator of taking the ACT or SAT, rates of missing data are based on the number of students in grades 11 and 12 in Ramp-Up (2,115) and comparison schools (2,082). For all other variables, rates of missing data are based on the total number of students in grades 10–12 in Ramp-Up schools (n = 3,198) and in comparison schools (n = 3,456).

a. Having an individualized education program is a proxy for receiving special education services.

b. Grade point averages that are unweighted measure grades earned in all courses on a 0–4 scale.

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

Process for coding and cleaning data

School- and student-level data. Various data-cleaning procedures were conducted, including 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. Some of the data gathered from the schools were continuous data (for example, student achievement) and did not require any data transformations. In other 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).

Interview and focus group data. The coding of transcripts took place in three steps. First, three study team members created one coding protocol for the interviews and another protocol for the focus groups based on the rubrics to assess implementation fidelity and to evaluate the contrast between Ramp-Up and comparison schools. The coding protocols indicated what information was to be collected from each transcript and what constituted full, partial, or insufficient alignment with the Ramp-Up program. For example, in response to the focus group question, "How do school staff engage with parents using the Postsecondary Plan?", a response indicating that schools engage in two-way communication with parents about their child's postsecondary plan received a code of 1 for fidelity of implementation, schools that indicated they provided the postsecondary plan to parents but did not discuss it with them received a code of 0.5, and schools that indicated they did not provide the postsecondary plan to parents received a code of 0. The codes for focus group indicators could therefore range from 0 (reflects no alignment with Ramp-Up) to 1 (complete alignment with Ramp-Up), with predetermined fractional codes (for example, 0.50) representing nearly complete alignment (or perception of alignment). In two instances, focus group members could reach no consensus on the proper response to a question, and those instances were coded as 0 (signifying a lack of fidelity). The rubric specifying the program components, indicators, and codes for responses were sent to the consortium for review and correction prior to coding.

Second, the study team randomly selected two transcripts to read and code as a team. Based on a discussion of these transcripts, study team members made modifications to the coding protocol and refined their joint understanding of the codes.

Third, the trained coders divided the transcripts and read and coded them according to the developed protocols. Each of the three coders reviewed two-thirds of the interview and focus group transcripts (about 13 transcriptions apiece, given 20 participating schools), so that each transcript was double coded. Coding discrepancies were discussed and recoded based on group consensus. Original interrater agreement for the transcripts was 0.83. Coders sought out key phrases that summarized themes from the full transcripts. These quotations help connect the research findings with the report's main audience.

Student and staff survey data. Student and staff survey responses were recoded so they reflected the extent to which the Ramp-Up model was implemented as intended by the consortium. These codes also 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). School scores on each indicator, subcomponent, and component were averaged with weights recommended a priori by the consortium.

Analyses to address research questions

Research question 1. Research question 1 asked about the characteristics of schools that participated in the study. For Ramp-Up and comparison schools, the study team used frequencies to describe the demographic and geographic composition of the schools, and averages to describe school achievement and college readiness. The frequencies and averages for the two groups, along with information for all Minnesota public schools that serve grades 10–12, are presented side by side in tables (see tables 1 and 2 in the main text).

Research question 2. The second research question asks how Ramp-Up differs from college supports in other schools. This is referred to as treatment contrast. Students in schools without Ramp-Up who are exposed to similar activities may demonstrate increased college readiness. This question was addressed by first comparing the types of college readiness supports available to students at Ramp-Up and comparison schools, as specified by school staff. The study team also reviewed the Ramp-Up advisors' guides and listed the types of activities (advisory sessions, workshops) that students in Ramp-Up schools should be performing. Finally, the team examined students' responses to the survey to see whether they observed differing amounts of emphasis on the five dimensions of college readiness.

Research question 3. The third research question asked whether Ramp-Up schools' implementation of Ramp-Up reached the consortium's expectations. To answer this question, the research team systematically examined the components and subcomponents (see box 2 in the main text for a chart of components and subcomponents) that the consortium considers essential for Ramp-Up to work:

- *Structural supports.* 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 advisory sessions); 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.* 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 students receive 28 weekly lessons lasting 30 minutes each and 5 workshops lasting 1 hour each. For teachers

to effectively lead advisory sessions and workshops, they 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 (for a description of each dimension, see box 1 in the main text)—content material related to all five dimensions needs to be presented throughout the school year.
- *Postsecondary planning tools.* For Ramp-Up to increase the college readiness among all students, the consortium requires that teachers use the postsecondary plan and the readiness rubric to assist students in developing realistic plans for achieving their educational and career aspirations. 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 use the tools, and how many students in their classes actually use the tools. Teachers also must share information from these tools with parents in two-way communication. Multiple indicators of each implementation component were embedded in the interview and focus group protocols, and in student and staff surveys. Other indicators were taken from information gathered from school-and student-level documents and data.

After completing the data-coding procedures (see "Process for coding and cleaning data," above), an implementation index was calculated in three steps. First, for indicators of fidelity based on staff or student surveys, the study team analyzed average responses across school respondents and then coded these averages 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 (for a list of the subcomponents, see figure 2 in the main report). 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 the averages of subcomponents were averaged to obtain each component score, and the overall fidelity index score was calculated by averaging school 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 and implementation of components and subcomponents were classified into three categories. Schools having fidelity index scores of less than 60 percent were judged as showing inadequate implementation, those having scores in the range of 60 to less than 90 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 were given labels of inadequate, adequate, and excellent for each subcomponent and component and for the entire fidelity of implementation model. This drill-down feature gives schools and the consortium diagnostic information on parts of implementation that require additional work.

Based on the completed inventories and school-specific responses to interview and focus group questions,[6] the research team calculated the number of supports that include a focus

on academic, admissions, career, financial, and personal–social readiness, as well as the distribution of different types of supports offered at the schools in each study group.

Additional information collected in the interviews and focus groups, school- and student-level documents and data, and the student survey was used to form component scores indicating the extent to which college-related practices or resources are similar to the practices or resources available in a school implementing Ramp-Up with fidelity. The process for calculating component scores was the same as in the analysis for research question 2.[7] The study team also analyzed student responses to survey items related to the five dimensions of readiness. By breaking out survey responses for the individual dimensions, the study team was able to determine which dimensions of readiness were most affected by Ramp-Up after one year of implementation.

Research question 4. Research question 4 asked about staff perceptions of Ramp-Up. Researchers used coding procedures similar to those already described to systematically code staff survey responses to open-ended questions about Ramp-Up's strengths and weaknesses and the factors that challenge or facilitate successful implementation. The research team used NVivo qualitative research software and key analytical categories to code the open-ended survey questions. Responses from school personnel were compared among schools, and themes were identified. This approach allowed for a systematic process of categorizing the data through reduction, organization, and connection. The method supports exploration and discovery of categorical relationships deriving directly from the data, and encourages sensitivity to emergent patterns and regularities along with contrasts and irregularities within and across respondents (Dey, 1993; LeCompte, 2000). In addition to drawing out the major themes in the informants' responses, the study team also grouped data into scales that reflect different aspects of Ramp-Up and perceptions of the program's curriculum, tools, and professional development.

Appendix C. Additional results related to research questions 3 and 4

This appendix presents detailed findings related to research question 3 (To what extent do schools implement the core components of Ramp-Up as intended by the College Readiness Consortium at the University of Minnesota?) and research question 4 (What do school staff in Ramp-Up schools perceive as the strengths and weaknesses of its curriculum, tools, and professional development, and which aspects of Ramp-Up did they consider more difficult to implement and why?). For research question 3, the fidelity scores for each component and subcomponent are presented by school (figure C1).

To what extent do schools implement the core components of Ramp-Up as intended by the consortium?

As mentioned in the main report, in aggregate, the 10 schools assigned to implement Ramp-Up during the 2013/14 school year met the consortium's threshold for adequate implementation. However, schools did not all meet the consortium's threshold for adequate fidelity for all components (see school scores in table C1).

What do school staff in Ramp-Up schools perceive as the strengths and weaknesses of its curriculum, tools, and professional development, and which aspects of Ramp-Up did they consider more difficult to implement and why?

Additional insight into school staff members' opinions on Ramp-Up was gleaned from staff survey responses as well as specific statements made during focus groups. This information is presented below.

Invitations to complete the Ramp-Up spring staff survey were sent to 183 staff from the 10 Ramp-Up schools, and 127 (63.4 percent) responded. Four staff were excluded from the analysis (three participants indicated that they did not play a role in delivering the Ramp-Up curriculum, and one participant had invalid responses), bringing the number to 123 staff included in the analysis. The survey items were grouped by content and then analyzed. The survey produced five reliable scales with internal consistencies ranging from 0.73 to 0.91 measuring staff knowledge of Ramp-Up, beliefs about preparing students for college, knowledge of college readiness, perceptions of the Ramp-Up curriculum, and perceptions of program effectiveness (table C2).

The major themes derived from the open-ended survey items and focus group responses are summarized in the main text. Samples of responses for each theme are presented in the sections below.

Understanding Ramp-Up. This scale measured the extent to which staff understood the goals of Ramp-Up, the five dimensions of readiness (academic, admissions, career, financial, and personal–social), and their own role in delivering Ramp-Up. Answer options ranged from 1 (strongly disagree) to 4 (strongly agree), with higher scores indicating better understanding of the program. The scale was highly reliable (Cronbach's alpha = 0.91). The average scale score of 3.17 for the sample suggests that collectively staff have a good understanding of goals of the program, dimensions of readiness, and their role in Ramp-Up. Nonetheless, there is room for improvement; additional professional development with teachers might yield better understanding of the program.

Table C1. Fidelity index scores for schools implementing Ramp-Up to Readiness (percent of indicators present), 2013/14

Component and subcomponent	All schools	School 1	School 2	School 3	School 4	School 5	School 6	School 7	School 8[a]	School 9	School 10
Overall fidelity	**70 (A)**	**70 (A)**	**61 (A)**	**74 (A)**	**64 (A)**	**76 (A)**	**72 (A)**	**72 (A)**	**79 (A)**	**66 (A)**	**67 (A)**
Structural supports	73 (A)	67 (A)	66 (A)	77 (A)	74 (A)	84 (A)	76 (A)	75 (A)	90 (E)	61 (A)	63 (A)
Ramp-Up leadership team	84 (A)	88 (A)	71 (A)	94 (E)	73 (A)	79 (A)	83 (A)	94 (E)	100 (E)	71 (A)	85 (A)
Ramp-Up coordinator	83 (A)	74 (A)	75 (A)	100 (E)	75 (A)	100 (E)	100 (E)	75 (A)	95 (E)	56 (I)	75 (A)
Ramp-Up advisors	95 (E)	100 (E)	100 (E)	100 (E)	100 (E)	100 (E)	100 (E)	100 (E)	100 (E)	75 (A)	75 (A)
Advanced courses	75 (A)	67 (A)	67 (A)	67 (A)	67 (A)	83 (A)	100 (E)	67 (A)	67 (A)	83 (A)	83 (A)
Support for professional development	89 (A)	92 (E)	100 (E)	100 (E)	100 (E)	100 (E)	88 (A)	88 (A)	100 (E)	75 (A)	50 (I)
Time to implement	54 (I)	33 (I)	26 (I)	52 (I)	77 (A)	97 (E)	32 (I)	70 (A)	67 (A)	39 (I)	44 (I)
Technology platform	34 (I)	16 (I)	27 (I)	29 (I)	28 (I)	29 (I)	28 (I)	29 (I)	100 (E)	30 (I)	29 (I)
Professional development	86 (A)	92 (E)	78 (A)	91 (E)	78 (A)	96 (E)	88 (A)	97 (E)	83 (A)	79 (A)	74 (A)
For leadership team and coordinator	93 (E)	93 (E)	92 (E)	100 (E)	79 (A)	96 (E)	100 (E)	100 (E)	89 (A)	83 (A)	100 (E)
For teachers/advisors	78 (A)	91 (E)	64 (A)	82 (A)	77 (A)	97 (E)	76 (A)	94 (E)	76 (A)	75 (A)	48 (I)
Curriculum delivery	75 (A)	72 (A)	72 (A)	75 (A)	77 (A)	60 (A)	87 (A)	79 (A)	86 (A)	79 (A)	62 (A)
Materials	85 (A)	88 (A)	71 (A)	91 (E)	92 (E)	97 (E)	98 (E)	63 (A)	84 (A)	84 (A)	85 (A)
Sufficient information	73 (A)	76 (A)	58 (I)	78 (A)	65 (A)	67 (A)	83 (A)	83 (A)	60 (A)	84 (A)	76 (A)
Advisory sessions	76 (A)	57 (I)	75 (A)	53 (I)	88 (A)	63 (A)	83 (A)	88 (A)	100 (E)	85 (A)	69 (A)
Workshops	65 (A)	67 (A)	83 (A)	79 (A)	63 (A)	13 (I)	83 (A)	83 (A)	100 (E)	63 (A)	17 (I)
Curriculum content	65 (A)	62 (A)	48 (I)	70 (A)	63 (A)	73 (A)	62 (A)	62 (A)	—	74 (A)	75 (A)
Academic readiness	53 (I)	53 (I)	28 (I)	57 (I)	58 (I)	76 (A)	35 (I)	57 (I)	—	53 (I)	60 (A)
Admissions readiness	69 (A)	46 (I)	44 (I)	96 (E)	69 (A)	55 (I)	94 (E)	85 (A)	—	82 (A)	47 (I)
Career readiness	75 (A)	100 (E)	50 (I)	100 (E)	50 (I)	100 (E)	50 (I)	50 (I)	—	75 (A)	100 (E)
Financial readiness	44 (I)	25 (I)	25 (I)	25 (I)	50 (I)	50 (I)	50 (I)	25 (I)	—	75 (A)	75 (A)
Personal–social readiness	86 (A)	87 (A)	92 (E)	71 (A)	87 (A)	85 (A)	80 (A)	92 (E)	—	87 (A)	92 (E)
Postsecondary planning tools	50 (I)	58 (I)	40 (I)	56 (I)	27 (I)	66 (A)	47 (I)	48 (I)	56 (I)	38 (I)	60 (A)
Use of postsecondary plan	61 (A)	63 (A)	48 (I)	55 (I)	42 (I)	79 (A)	69 (A)	77 (A)	54 (I)	53 (I)	70 (A)
Use of readiness rubric	58 (I)	56 (I)	67 (A)	53 (I)	37 (I)	77 (A)	56 (I)	61 (A)	62 (A)	60 (A)	52 (I)
Parent communication	30 (I)	55 (I)	4 (I)	60 (A)	3 (I)	42 (I)	16 (I)	5 (I)	51 (I)	2 (I)	58 (I)

Note: E = excellent implementation (scores greater than or equal to 90 percent); A = adequate implementation (fidelity scores between 60 percent but less than 90 percent); I = inadequate implementation (fidelity scores less than 60 percent).

a. Curriculum content scores are unavailable for this school because the indicators for this component come exclusively from the student survey, and this school was unable to administer that survey prior to the end of the school year.

Source: Authors' analysis based on data and methods described in appendix B.

Table C2. Number of items, reliability, range, and average scale scores for scales created from the staff survey, 2013/14

Scale	Number of items	Cronbach s alpha	Range	Scale Average	Closest scale descriptor	Scale standard deviation
Understanding Ramp-Up	3	0.91	1–4	3.17	Agree	0.66
Beliefs about preparing all students for college	3	0.73	1–4	3.05	Agree	0.60
Knowledge of college and career readiness	6	0.89	1–6	4.65	Proficient	0.77
Perceptions of Ramp-Up curriculum	11	0.89	1–4	2.79	Agree	0.38
Perceptions of program effectiveness	8	0.87	1–4	2.82	Agree	0.42

Note: Cronbach's alpha is a measure of how closely the items are measuring the same thing (that is, reliability). Alphas closer to 1.00 have better reliability; alphas greater than 0.60 are usually considered sufficient by the What Works Clearinghouse.

Source: Authors' analysis of data from staff survey.

Beliefs about preparing all students for college. This scale measured staff perceptions of whether their school and all teachers should advise and prepare all students to go on to college, and the extent to which personnel in their school share a common goal of preparing students for college. Answer options ranged from 1 (strongly disagree) to 4 (strongly agree), with higher scores indicating more positive beliefs. The scale was reliable (Cronbach's alpha = 0.73), and the scale score of 3.05 for the sample suggests that staff generally agree that the school shares a common goal and should prepare all students for college.

Knowledge of college readiness. This scale rated staff's own knowledge of the components of college readiness, such as tests that students need to take for admission to college, the level of academic skill necessary for college work, and the college application process. Answer options ranged from 1 (no knowledge) to 6 (advanced knowledge), with higher scores indicating more advanced knowledge of college and career readiness. The scale was reliable (Cronbach's alpha = 0.89), and the scale score of 4.65 for the sample suggests that staff generally reported having moderate to proficient knowledge of college and career readiness.

Perceptions of the Ramp-Up curriculum. This scale measured staff perceptions of the extent to which the Ramp-Up curriculum helps students in the way it is intended, such as whether the curriculum enables students to make informed decisions, develops students' beliefs that they can turn their postsecondary plans into realities, and provides students with clear information about what steps must be taken to enroll in college. Answer options ranged from 1 (strongly disagree) to 4 (strongly agree), with higher scores indicating more positive perceptions of the curriculum. The scale was reliable (Cronbach's alpha = 0.89), and the average score of 2.79 for the sample suggests that staff as a whole held somewhat positive perceptions of the program's curriculum.

Perceptions of program effectiveness. This scale measured the extent to which staff perceived the Ramp-Up program as effective, such as increasing students' ability to set educational goals, create relationships to support their goals, and meet admissions requirements for a range of colleges. Answer options ranged from 1 (strongly disagree) to 4 (strongly agree), with higher scores indicating more positive perceptions of program effectiveness. The scale was reliable (Cronbach's alpha = 0.87), and the scale score of 2.82 for the sample suggests that staff somewhat agreed that the Ramp-Up program is effective in improving students' college readiness.

Analysis of program strengths and weaknesses were taken from answers to the open-ended questions on the staff survey. Additional themes related to implementation challenges were analyzed from focus group transcripts, and are summarized in the main text.

Program strengths. The Ramp-Up curriculum was the most frequently mentioned strength of the program. Staff commented on the organization of the lessons in the curriculum and found it easy to use. The following quotes illustrate most of the ideas expressed about the curriculum.

> "I liked the content and the way it is organized. I appreciated all the information on college application and success; there was so much information I did not know when I went to college that was covered in-depth in the material."

> "Ramp-Up outlines career paths and how to find where students are headed after college. It has well-laid-out lessons and links that do make it easy to teach."

Ramp-Up advisors also mentioned the usefulness of tools like the readiness rubric to keep students on track and accountable.

Staff also commented on the practicality of the lessons, particularly on academic and financial readiness. One staff member commented:

> "The sections on matching up interests with majors and academic programs with schools are very good. I also thought the session about funding an education and identifying available scholarships gave helpful general information."

Weaknesses. When asked about the limitations of the program, staff frequently commented on Ramp-Up's relatability to students, especially those who are considering two-year rather than four-year colleges. For example, one staff member wrote on the staff survey:

> "[Ramp-Up] focuses too much on the traditional 4-year college. There are many students interested in taking other paths [that] are being left behind."

This weakness may reflect the fact that most of the study schools were located in rural communities with industries and highly specialized work that required two-year or technical degrees. Similarly, feedback from some staff revealed that geography also shaped how students and staff responded to some of the lessons. A survey respondent commented:

> "Some videos seemed to lose the students as they were geared to 'city kids'."

Another frequent theme in staff statements about weaknesses involved the production quality of the videos used during lessons. The video quality was described as "outdated" and the acting as "ditzy." An advisor suggested that Ramp-Up use students from a school drama department. Another advisor stated that the videos became "a joke amongst the students," leaving some uninterested.

Staff at Ramp-Up schools also mentioned the scope and sequence of lessons and activities covered in each grade as a weakness. They thought that either too much or not enough

time was dedicated to lesson units. Some respondents found the advisory sessions to be misaligned with where students were in the academic year. One respondent stated:

> "Some of the lessons did not match up with where our students were in the school year."

Additionally, staff commented that some lessons for the upper grades would have been more appropriate for earlier grades. These critiques suggest greater emphasis could be placed on scope and sequence and the adaptation or modification of the program model during professional development sessions.

Another weakness often mentioned by school staff involved the variation in time to complete the advisory sessions. They remarked that they were sometimes able to complete advisory sessions in less time than was allocated. For example, one advisor (teacher) commented that the school was challenged by "how to adjust" (not wanting "down time"), but finding that "the curriculum [moves faster] for some classes than it does others." When advisory sessions wrapped up with time left over, staff were not always prepared on what to do next. The consortium may want to revisit the amount of time required to complete advisory sessions and offer additional exercises or activities, should sessions finish early.

Notes

1. Practice guides developed by the What Works Clearinghouse bring together the recommendations of experts with the evidence on those recommendations. The level of evidence for the recommendations is determined by systematically searching the research literature and combining the impact estimates from studies that meet the What Works Clearinghouse standards (and that meet the standards with reservations). The recommendations in this practice guide had low to moderate levels of evidentiary support. More information is available at http://ies.ed.gov/ncee/wwc/.
2. Alliance members also wanted to know about the program's impact on student outcomes. REL Midwest has conducted a separate study of Ramp-Up's immediate impact using sample of 50 schools. Findings from that study will be the subject of another report.
3. Upward Bound is a federally funded program that offers grants to colleges and school districts for supplemental tutoring, guidance, and assistance to disadvantaged youth and children whose parents never attained a bachelor's degree. The supplemental support is intended to help participating students enroll and succeed in college.
4. Exact school details are omitted to protect schools' identities.
5. Response rates for interviews and focus groups are not discussed because there were no instances of turned-down invitations or refusals to participate in these data collection activities.
6. Because some schools may deliver the same types of programs differently in their environments, college readiness supports were indexed according to context-specific responses provided by school personnel. For example, different schools offering the same programs (for example, Upward Bound) may have responded differently regarding the types of supports these programs address.
7. There is overlap in the components and indicators used in the analyses for research questions 2 and 4. However, not all components included in research question 2 are appropriate for making comparisons. For example, the components in research question 2 for the Ramp-Up leadership team or Ramp-Up coordinator do not apply in comparison schools. In addition, components used in both analyses do not necessarily include the same measures in research questions 2 and 4, because not all instruments are administered in comparison schools.

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