Massachusetts High School Graduation Initiative (MassGrad)

Final Evaluation Report, June 2016

Prepared for the Massachusetts Department of Elementary and Secondary

Education

# Acknowledgments

The UMass Donahue Institute extends its sincere appreciation to the many people who supported and collaborated with us on this evaluation. In particular, we want to thank personnel from the Massachusetts Department of Elementary and Secondary Education, the MassGrad Leadership Council, the Gateway to College programs, the MassGrad Coalitions, and MassGrad schools, districts, partners, and vendors.

Massachusetts High School Graduation Initiative (MassGrad)

Final Evaluation Report, June 2016

**Project Staff**

Eliot Levine, Senior Research Manager, Project Manager

Jeremiah Johnson, Research Manager and Quantitative Specialist

Jenny Malave, Senior Research Analyst

Steven Ellis, Co-Director, Applied Research and Program Evaluation

**Report Information**

This report was prepared by the UMass Donahue Institute, the project evaluator, under contract with the Massachusetts Department of Elementary and Secondary Education.

**About the Donahue Institute**

The University of Massachusetts Donahue Institute is the public service, outreach, and economic development unit of the University of Massachusetts President’s Office. Established in 1971, the Institute strives to connect the Commonwealth with the resources of the University through services that combine theory and innovation with public and private sector applications.

UMDI’s Applied Research and Program Evaluation group specializes in applied social science research, including program evaluation, survey research, policy research, and needs assessment. The group has designed and implemented research and evaluation projects for diverse programs and clients in the areas of education, human services, economic development, and organizational development.

University of Massachusetts Donahue Institute 413-587-2400 (phone)

Applied Research and Program Evaluation Group 413-587-2410 (fax)

100 Venture Way, Suite 5 [www.donahue.umassp.edu](http://www.donahue.umassp.edu)

Hadley, MA 01035-9462

# Table of Contents

[Executive Summary iii](#_Toc454953257)

[Introduction 1](#_Toc454953258)

[MassGrad Initiative Impacts 4](#_Toc454953259)

[Implementation Awards 19](#_Toc454953260)

[Gateway to College 46](#_Toc454953261)

[MassGrad Coalitions 54](#_Toc454953262)

[Dropout Prevention and Re-engagement Work Group 58](#_Toc454953263)

[Leadership Council 74](#_Toc454953264)

[Planning Awards 77](#_Toc454953265)

[References 82](#_Toc454953266)

[Appendices 83](#_Toc454953267)

Appendix A: Modeling Procedures for CITS Analyses 84

Appendix B: MassGrad Impacts on Achievement Gaps 85

Appendix C: Implementation Award Analysis Methods 88

Appendix D: Implementation Award Analysis Findings 91

Appendix E: Summary Briefs – Implementation Awards 103

E1: Adult Advocates for Student Support 104

E2: Alternative Pathways to a High School Diploma 109

E3: Expansion of the School Year and Summer Transition 115

E4: School Climate and Socio-emotional Systems of Support 120

E5: Service-Learning and Work-Based Learning 125

Appendix F: Summary Brief – Gateway to College 131

Appendix G: Summary Brief – MassGrad Coalitions 138

**Executive Summary**

**Introduction**

The Massachusetts Department of Elementary and Secondary Education (ESE) was awarded a federal High School Graduation Initiative (HSGI) grant for the years 2010–2015 to support statewide and local efforts focused on high school dropout prevention, intervention, and recovery. Known locally as MassGrad, the grant targeted the 133 Massachusetts high schools (“the MassGrad cohort”) that exceeded the statewide annual dropout rate of 2.9 percent during the 2008–09 school year. By the end of the grant period, the cohort had been reduced to 120 schools (“the current MassGrad cohort”), due to school closings and mergers.

These schools and their districts received funding and/or technical assistance to support initiatives at the school and district levels. They were also intended to benefit from statewide initiatives for sharing best practices as well as changes to state-level college and career readiness infrastructure. MassGrad funding supported four site-based programs—the Implementation Awards[[1]](#footnote-1), Planning Awards, MassGrad Coalitions, and Gateway to College—plus the state-level Leadership Council and Dropout Prevention and Re-engagement Work Group.

A primary aim of the MassGrad initiative was to reduce the statewide annual dropout rate to 1.7 percent by the end of the 2013–14 school year, from its 2008–09 level of 2.9 percent, as recommended in the 2009 “Making the Connection” report from the Massachusetts Graduation and Dropout Prevention and Recovery Commission.

MassGrad was part of a broader effort, as specified in the Delivery Plan of ESE’s College and Career Readiness group, to increase the Massachusetts 5-year high school graduation rate to 88.3 percent. The statewide annual dropout rate fell to 2.0 percent in the 2013–14 school year and to 1.9 percent in the 2014–15 school year. (ESE extended the evaluation by a year, in part to be able to consider an additional year of dropout rates.) For schools in the MassGrad cohort, the annual dropout rate fell from 6.2 percent in the 2008–09 school year to 4.0 percent in the 2013–14 school year and 3.7 percent in the 2014–15 school year.

The MassGrad evaluation was conducted by the UMass Donahue Institute (UMDI). The evaluation began during the fourth quarter of MassGrad’s first year, the 2010–11 school year, which coincided with the first major field activities. The 2011–12 school year was therefore the first full year of substantial evaluation activity, which continued through the 2014–15 school year.

This final evaluation report presents a summary of findings from the entire grant period. The body of the report primarily presents quantitative outcome findings. The findings from interviews, observations, open-ended survey items, and other non-quantitative data sources are primarily presented in two ways. First, the appendices of this report contain a series of summary briefs about several of the MassGrad initiatives. ESE asked UMDI to write these briefs for dissemination to a public audience. Second, the three annual evaluation reports contain extensive qualitative findings about each MassGrad initiative.[[2]](#footnote-2) This executive summary provides a brief overview of the findings for the overall MassGrad Initiative, followed by findings for each of its component programs and initiatives.

**MassGrad Initiative Impacts**

This report presents findings from statistical analyses that compared the annual dropout rates, 4-year graduation rates, and Massachusetts Comprehensive Assessment System (MCAS) achievement gaps of schools that participated in the MassGrad initiative with schools that did not participate. Two rigorous, quasi-experimental methods were used to assess the efficacy of the MassGrad intervention. Regression discontinuity (RD) analyses were completed to assess program impacts related to annual dropout rates and 4-year graduation rates. Comparative interrupted time series (CITS) analyses were completed to assess program impacts on achievement gaps.

Annual dropout rates decreased and graduation rates increased for both MassGrad and non-MassGrad schools during the MassGrad funding period. The state’s average annual dropout rate fell from 2.9 percent in 2008–09 to 1.9 percent in 2014–15, and the 4-year graduation rate rose from 81.5 percent in 2008–09 to 87.3 percent in 2014–15. For MassGrad schools, the average annual dropout rate fell from 6.1 percent in 2008–09 to 3.7 percent in 2014–15, and the 4-year graduation rate rose from 67.8 percent in 2008–09 to 77.2 percent in 2014–15.

These changes are substantial and have been celebrated in the Commonwealth. They also represent a narrowing of the gap in dropout rates between the MassGrad schools and the state average, from 3.2 percentage points when the MassGrad schools were selected to 1.8 percentage points at the end of the MassGrad intervention. With regard to the MassGrad initiative’s ambitious goal of reducing the annual dropout rate to 1.7 percent by 2013–14, most of the improvement has already occurred, but an additional reduction of 0.2 percentage points would be required to meet the goal.

Improvements in annual dropout rates and 4-year graduation rates during the MassGrad intervention period were not significantly different for MassGrad and non-MassGrad schools that were close to the cut-point for MassGrad participation (i.e., a 2.9 percent annual dropout rate in school year 2008–09). In other words, even though the dropout rates for all MassGrad schools fell more than for non-MassGrad schools, the difference was not statistically significant for MassGrad and non-MassGrad schools that were most similar to each other prior to the intervention—those whose dropout rate was closest to the cut-point that was used in the regression discontinuity analyses.

The interaction between 2008–09 annual dropout rates and MassGrad participation status was statistically significant. This means that the relationship between dropout rates before and after MassGrad was different for MassGrad and non-MassGrad schools. Specifically, MassGrad schools saw their annual dropout rates decrease at a slightly lower rate than non-MassGrad schools. This corresponded to one additional dropout for every 250 students enrolled in the MassGrad schools that had a pre-MassGrad annual dropout rate close to the cut-point (i.e., the 55 MassGrad schools that had the lowest annual dropout rates before the intervention).[[3]](#footnote-3)

CITS analyses compared MassGrad schools to non-MassGrad schools to assess MassGrad’s impacts on MCAS achievement gaps for three MCAS exams (English Language Arts, Mathematics, and Science) and six comparison groups (male, Asian, African American/Black, Hispanic or Latino, students with disabilities (SWD), and students eligible for free or reduced-price lunch (FRL)). Of the resulting 18 comparisons, 3 statistically significant differences were identified, all of which favored MassGrad schools over non-MassGrad schools. Specifically, the achievement gap improved more in MassGrad schools than non-MassGrad schools between males and females in English language arts and between SWD and non-SWD students in mathematics and science. For the remaining 15 comparisons, there were no differences between MassGrad and non-MassGrad schools with regard to changes in achievement gaps. These findings show that MassGrad had positive impacts on selected MCAS achievement gaps for two student subgroups, but not for most student subgroups across multiple academic disciplines.

When considering the MassGrad initiative as a whole, impacts on dropout rates, graduation rates, and MCAS achievement gaps in relation to the comparison groups are modest and mixed. This pattern of findings has multiple plausible explanations that would argue against dismissing or downplaying the value of the MassGrad interventions either individually or collectively. Considering these explanations is important, because dropout rates improved substantially state-wide during the MassGrad period, some of the individual MassGrad programs had substantial impacts (as described in subsequent sections), and our interviews with program personnel suggested that the interventions were effective for many students.

There are multiple factors that could have made it difficult to detect unique impacts of the MassGrad programs on MassGrad participants. First, non-MassGrad schools participated in some of the MassGrad interventions, particularly those associated with the Work Group. Second, some relevant aspects of both MassGrad and non-MassGrad schools were not accounted for in this study, such as interventions relevant to high school completion and academic achievement that fell outside of the MassGrad initiative and could not be measured. These may have included interventions associated with the Massachusetts Race to the Top initiative, the Commonwealth’s adoption of the Common Core State Standards in 2010, or other programs taking place in Massachusetts schools—for example, students in non-MassGrad schools participating in credit recovery courses (such as those offered by some Implementation Award schools) or early college programs (such as those offered by the MassGrad Gateway to College sites).

It is also important to consider the size of the MassGrad intervention. For more than half of the schools in the MassGrad cohort, the initiative consisted primarily of participation in the periodic gatherings and webinars of the Dropout Prevention and Re-engagement Work Group by teams of four to five school and district personnel on average. These were substantial offerings over a multi-year period on key topics related to dropout prevention and re-engagement. However, they may have comprised a relatively small portion of the overall resources invested in dropout prevention and graduation efforts in some MassGrad schools and districts.

As explained in the following sections, significant impacts were detected for some of the individual interventions within the MassGrad initiative. More extensive information about the impacts of the MassGrad initiative are presented in the three MassGrad evaluation annual reports, which will be posted on the ESE website on a subpage of <http://www.doe.mass.edu/ccr>. The next several sections describe the implementation and outcomes of the MassGrad programs considered individually.

**Implementation Awards**

MassGrad schools that had 20 or more dropouts in 2008–09 were eligible to apply for competitive awards, called “Implementation Awards,” to implement dropout prevention, intervention, and recovery programs using their choice of up to three out of seven strategies that ESE designated as evidence-based. These schools would also receive technical assistance from a vendor hired by ESE. Funding was for up to $100,000 per year. Awards were made to 28 schools in 17 districts. All awards were made for three years (through September 30, 2013), and all awardees subsequently received two additional years of funding through the 2014–15 school year.

The Implementation Award programs spanned an extensive range of designs for each strategy. Many of the programs utilized common elements, but the programs did not comprise a set of prescribed models that were replicated across sites.

ESE’s support of the Implementation awardees involved responding to program needs, conducting site visits, and providing technical assistance. ESE’s technical assistance included collaborating with vendors to host Awardee Gatherings and open houses for awardees to visit each other’s schools, as well as sharing information via the MassGrad Minute newsletter, the MassGrad website, and evaluation briefs focused on Implementation Award strategies.

UMDI’s data collection activities included more than 200 on-site and phone interviews with personnel in awardee schools and districts, ESE program managers, and the technical assistance vendor. We also observed two to four technical assistance events annually and reviewed awardee’s proposals, progress reports, and annual participant data submissions.

The seven Implementation Award strategies were:

1. Adult advocates for student support.
2. Alternative pathways to a high school diploma.
3. Credit recovery and acceleration.
4. Expansion of the school year and summer transition.
5. School climate and socio-emotional systems of support.
6. Service-learning and work-based learning.
7. Programs for transient students and English language learners.

**Program implementation.** Extensive qualitative information about the seven Implementation strategies is provided in the three MassGrad annual evaluation reports and in case studies of three Implementation Award sites (UMass Donahue Institute 2015a, 2015b, 2015c). Summary briefs were also written for five of the strategies: adult advocates (Appendix E1), alternative pathways (Appendix E2), expansion of the school year (Appendix E3), school climate and socio-emotional systems of support (Appendix E4), and service-learning and work-based learning (Appendix E5). Detailed findings related to the credit recovery strategy are also available in a published summary brief for teachers (UMass Donahue Institute 2015d), as well as in a policy report and a second summary brief that are in press and will be available at <http://www.nmefoundation.org/resources>. These sources all discuss promising practices, successes, and challenges. A separate deliverable was not written for the seventh strategy—programs for transient and ELL students—which was selected by only two districts. Work related to this strategy was integrated with other strategies and is described in the annual reports and summary briefs.

Implementation program services reached a relatively high-risk population of students, with 48 percent in the high-risk category and 28 percent in the moderate-risk category of ESE’s Early Warning Indicator System (EWIS). Participants also included students eligible for free and reduced-price lunch (82 percent), students with disabilities (20 percent), and English language learners (18 percent). Their grade levels were 8th (5 percent), 9th (37 percent), 10th (19 percent), 11th (18 percent), and 12th (22 percent)

**Program outcomes.** Statistical analyses compared the graduation, dropout, attendance, and MCAS performance of students who participated in Implementation programs with students who did not participate. We used rigorous, quasi-experimental, matched comparison group designs with propensity score weighting procedures to draw strong conclusions about the effectiveness of the programs.

Analyses included all students (N=12,454) who participated during school years 2011–12, 2012–13, and 2013–14. The comparison group included all students (N=48,615) at the same sites who did not participate. Effects were assessed during students’ final year of participation and one, two, and three years later. Depending on the time period and outcome indicator, different groups of students were included in different analyses.

Annual dropout rates decreased and graduation rates increased both for Implementation Award schools and state-wide. As noted earlier, the state’s average annual dropout rate fell from 2.9 percent in 2008–09 to 1.9 percent in 2014–15, and the 4-year graduation rate rose from 81.5 percent in 2008–09 to 87.3 percent in 2014–15. For Implementation Award schools, the average annual dropout rate fell from 8.1 percent in 2008–09 to 4.8 percent in 2014–15, and the 4-year graduation rate rose from 61.2 percent in 2008–09 to 70.8 percent in 2014–15. These findings indicate a narrowing of the gap in dropout rates between Implementation Award schools and the state average, from 5.2 percentage points when the Implementation Award schools were selected to 2.9 percentage points at the end of the MassGrad intervention.

A complex picture emerged regarding the impact of participating in Implementation programs. A strong, positive finding is that participants were less likely than similar non-participants to drop out during their final year of participation and one year later. However, they were no more or less likely than non-participants to drop out two or three years after participating. Specifically, participants were 0.37 times as likely as non-participants to drop out during their final year of participation, and 0.73 times as likely to drop out one year after their final year of participation. Results varied by subgroup, with many subgroups less likely than non-participants to drop out in their final year of participation. Notably, African American/Black participants were the only subgroup that was less likely to drop out during the final year of participation as well as one, two, and three years after the final year of participation.

With regard to graduation rates, Implementation participants were generally no more or less likely to graduate than non-participating students. The one exception was that White students who participated in Implementation programs were less likely to graduate than non-participants during their final year of participation, and three years after their final year of participation.

Impacts were also investigated by Implementation strategy. Students who participated in the Alternative Pathways and Expanded Time strategies had the most positive impacts with regard to their likelihood of dropping out, with the impacts lasting up to two years after the final year of participation. Students who participated in Credit Recovery had strong positive impacts on dropout rates in the final year of participation, but after one or more years no difference was detected compared to non-participants. Students who participated in Adult Advocates and School Climate programs were no more or less likely to drop out or graduate than similar non-participants during the final year of intervention, but in the years after intervention their dropout rates were substantially worse than non-participants. The extent of the impact varied across strategies and time; for example, Alternative Pathways participants were 0.35 times as likely as non-participants to drop out two years after participation, and Adult Advocates participants were 2.08 times as likely as non-participants to drop out three years after their final year of participation.

Hypotheses for these findings are offered with regard to duration and intensity of the intervention. For example, the strong, positive findings for Alternative Pathways participants may reflect that programs at several sites provided intensive supports to a carefully selected group of students over a long period of time. The negative findings for Adult Advocates programs in the years after participation suggest that students who participate in Adult Advocate programs may need ongoing support until graduation.

A similar argument could be made for the findings with regard to the likelihood of dropping out for all Implementation Award participants, which are positive and persistent until one year after participation, but not two or three years after their final year of participation. This shows that the Implementation programs were effective for keeping at-risk students enrolled in school during or shortly after the intervention. However, the Implementation programs taken together were not an effective dropout deterrent two or three years after participation was complete. This pattern of findings is also consistent with the hypothesis that the quality of program implementation improved in the later years of the MassGrad initiative, as the sites gained greater experience with offering their interventions. Only students from the first and second years of MassGrad could be included in analyses looking two and three years out, and those were the years that lacked positive impacts on dropout rates.

With regard to academic achievement, students who participated in Implementation programs scored slightly lower on the English language arts, mathematics, and science MCAS exams than similar students who did not participate in the intervention. A possible explanation of these findings would be that the content presented in traditional English, mathematics, and science classrooms, as well as supplemental MCAS test preparation activities, are better aligned with the MCAS exam than those presented in the Implementation interventions.

All of the hypotheses presented would require confirmation through additional research. For all findings, it is important to keep in mind that this was a quasi-experimental study, not an experimental study. In other words, students were not randomly assigned to Implementation Award or non-Implementation Award conditions. Despite our rigorous (and generally successful) efforts to balance the treatment and comparison samples on many relevant variables, it is possible that differences between these two groups existed prior to treatment on variables that were not available for inclusion in our analytic models. For example, many non-participants in both groups are likely to have participated in interventions focused on dropout prevention and high school completion that were not part of the MassGrad initiative and could not be accounted for with available data. Also, the intensity and duration of Implementation interventions varied widely both within and between sites, and within and between strategies.

Despite these limitations, it is notable that significant findings were detected, particularly a strong, positive finding related to the primary purpose of the MassGrad initiative: students who participated in Implementation Award programs were less likely to drop out during their final year of participation and one year later than similar non-participants. We believe that these findings—as well as the extensive qualitative findings presented in the summary briefs and annual reports—are useful for gauging impacts, identifying promising practices, and informing policy conversations regarding dropout prevention and high school completion strategies.

**Gateway to College**

The Gateway to College (GtC) program is intended to engage youth who have dropped out of high school or who are not on track to graduate, enabling them to complete their high school diploma requirements at institutions of higher education while simultaneously earning college credits toward an associate’s degree or certificate. The program is intended to support the academic, social, and emotional needs of participating students. The program’s location on a college campus may make it more desirable to students who are not succeeding in a traditional high school setting. At the same time, the college’s partnership with a public school district brings expertise and support from secondary school and district personnel.

Bristol Community College (BCC), Quinsigamond Community College (QCC), and Springfield Technical Community College (STCC) each partnered with one or two Massachusetts school districts to implement GtC programs with the support of MassGrad funding. The Gateway to College National Network (GtCNN) provided training and technical assistance. BCC and QCC received their MassGrad awards in October 2011, and STCC received the final MassGrad award in the spring of 2012. Each partnership received three years of MassGrad funding and planned their program for one or two semesters before enrolling students. BCC first enrolled students in January 2012, QCC in September 2012, and STCC in September 2013.

UMDI’s data collection activities included more than 40 interviews with ESE program managers; program administrators, faculty, and resource specialists; personnel from partnering school districts; and technical assistance providers from GtCNN. We also conducted site visits, observed statewide technical assistance meetings, and reviewed program documentation and student data.

A total of 273 students were enrolled across the three sites from school years 2011–12 to 2013–2014. Sixty-one percent were eligible for free or reduced-price lunch, 7 percent were students with disabilities, and 2 percent were English language learners. In addition, 56 percent of the students were female, 54 percent were White, 26 percent were Hispanic/Latino, 16 percent were African American/Black, 3 percent were Asian, and 1 percent each were Multi-Race Non-Hispanic or Latino, American Indian or Alaskan Native, or Native Hawaiian or Pacific Islander. Students ranged in age from 16 to 20 years old, but 90 percent of students were 16 to 18 years old. Across sites and sending districts, students entered the program with from 44 to 55 percent of the credits required for graduation from their sending high schools.

The small number of participants and the student selection procedures precluded randomized or quasi-experimental approaches to assessing the impacts of GtC participation. However, several indicators of positive program impacts were evident. As of spring 2014, 17 percent of students had graduated from the GtC program and 34 percent remained enrolled in the program. A national average across GtC sites is not available, but GtCNN staff believed that this rate was similar to most programs in the early stages of implementation, such as the MassGrad sites. By June 2015, 49 percent of these students had graduated from high school and 26 percent had dropped out of high school. Sites did not track their students’ post-GtC outcomes.

Additional positive outcomes were also evident in relation to MassGrad’s college and career readiness goals. The participants included 31 students who had dropped out of high school prior to enrolling in GtC. Sixteen of these students (52 percent) had graduated from high school by June 2015, and an additional 7 students (23 percent) remained enrolled, suggesting GtC’s effectiveness as a strategy for dropout prevention and re-engagement. In addition, depending on the site, enrolled students had earned an average of 10 to 12 college credits, and students who graduated from the program had earned an average of 20 to 26 college credits.

In addition to the quantitative findings presented in this final evaluation report, extensive qualitative information about the GtC programs is presented in the Gateway to College Summary Brief (Appendix F) and the three MassGrad evaluation annual reports regarding program implementation, successes, challenges, recommendations, sustainability, technical assistance, and additional resources.

**MassGrad Coalitions**

MassGrad provided funding and technical assistance to four community and regional coalitions. The mission of the coalitions was to identify a challenge in their community related to dropout prevention that they believed could be addressed most effectively through a collaborative approach across schools, districts, community-based organizations, businesses, and government agencies. The coalitions were located in Franklin County, Malden, New Bedford, and Worcester. They received MassGrad support for the 2012–13, 2013–14, and 2014–15 school years. The School & Main Institute (SMI) provided technical assistance to help the coalitions refine goals, develop and implement strategies, measure outcomes, and plan for sustainability beyond the funding period.

UMDI’s data collection activities included annual interviews of ESE program managers, coalition managers, coalition members, and the technical support provider (School & Main Institute); surveys of coalition members; and observations of coalition meetings and technical assistance events. Additional data sources included awardee proposals, reports from the coalitions to ESE, and attendance data from coalition meetings.

The primary goals of the four coalitions were respectively: (1) reducing dropout rates related to student mobility; (2) providing adult advocates to at-risk students, and addressing mental health issues that contribute to students dropping out; (3) creating a culturally responsive and multilingual family engagement center for at-risk English language learners and their families to engage in college and career readiness discussion and preparation; and (4) reducing the dropout rate of Hispanic/Latino and ELL students.

The coalitions worked toward these goals using a wide variety of strategies. All of the coalitions developed forums, led by a coalition manager, where members could collaborate to pursue their common goals. Their diverse strategies included joint problem-solving discussions and sharing of best practices across members, training adults from the community to support student progress toward graduation, and offering a professional development day focused on student mental health issues. Multiple coalitions provided student and family supports such as adult education classes, translation services, immigration and deportation supports, help with completing college and financial aid applications, high school transition programs for 9th graders, and developing a smartphone app that provided information about community resources. One coalition also advanced restorative justice practices through trainings for students, school personnel, and coalition members, as well as offering enrichment activities that included conflict resolution groups, theater, mentoring, and yoga.

Findings regarding the coalitions’ effectiveness are based exclusively on feedback from members, ESE, and SMI. Coalitions developed priority areas, impact measures, and tracking plans, as shown in the summary brief. However, collecting data related to these areas was an ongoing challenge for the coalitions, and the coalitions were not required to present final data regarding their progress in these areas. When discussing outcomes and impact, ESE noted that direct student impact within the context of the coalitions had not been defined and was not their intended goal for the coalitions. Specifically, one ESE representative said, “We were never looking for a specific impact, a number ...We just wanted them serving the highest risk students.”

In annual surveys of coalition members, the majority of respondents reported that the coalitions had been successful or very successful in “reducing the dropout rate among these ‘at-risk’ youth” (61 percent). About half of the respondents saw their coalitions as successful or very successful in “providing services to ‘at-risk’ youth” and “changing the way I and/or my organization accesses or utilizes resources or services related to dropout prevention and recovery.” Almost all respondents agreed that the coalition had a positive impact on their organizations. In addition, most reported that they were in contact with coalition members outside of meetings to discuss non-coalition-related activities, suggesting that the coalition’s impact was leveraged beyond its specific activities.

In the final year’s member survey, 71 percent of respondents believed that their coalition would continue beyond the MassGrad funding period, and an additional 18 percent believed that it might continue. In addition, 78 percent of respondents reported that they would continue to participate in their coalition, and an additional 18 percent reported that they might continue. Only two percent reported that they would not continue to participate.

Extensive information about the coalitions is presented in the MassGrad Coalitions Summary Brief (Appendix G), the three MassGrad evaluation annual reports, and four case studies developed by the School & Main Institute.[[4]](#footnote-4) This report includes overviews of each of the coalitions’ activities; promising practices, successes, and challenges for each of the coalitions; and descriptions of the technical assistance provided to the coalitions.

**Dropout Prevention and Re-engagement Work Group**

The Dropout Prevention and Re-engagement Work Group is a partnership between ESE and the 120 schools from 76 districts in the current MassGrad school cohort. It is intended to provide opportunities for networking, sharing promising approaches, and creating an infrastructure of collaboration around all topics concerning dropout reduction. The Work Group existed for two years prior to the MassGrad award but was expanded as part of MassGrad to include more districts and activities.

Participating schools and districts were expected to create a team of staff that would engage in Work Group activities and be primarily responsible for ongoing local needs assessments, analysis of early indicator data, collaboration with other MassGrad school teams, and implementation of expanded programs and services. The teams were expected to include not only staff of target schools but also representatives from the school district and feeder middle schools.

The Work Group was originally intended to include only state-wide gatherings, but based on feedback from districts, ESE added regional gatherings and webinars. These additions were a joint effort across several ESE college and career readiness initiatives, so they included but were not limited to MassGrad districts.

UMDI’s data collection activities included interviews with ESE program managers, an annual survey of Work Group members and participants, and observation of Work Group events. Additional data sources included registration and attendance data from Work Group gatherings and webinars.

ESE held eight state-wide Work Group gatherings from school years 2010–11 to 2014–15, with an average registration of 134 individuals from 29 districts. ESE also held 10 regional gatherings in school years 2013–14 and 2014–15, with an average registration of 30 participants from 5 MassGrad districts. ESE provided 23 webinars to Work Group members, with an average attendance of 24 registrants drawn from 16 districts. (The number of participants exceeded the number of registrants, because multiple individuals could “attend” a webinar by viewing a single screen together.) Last, ESE hosted a celebratory, culminating “MassGrad Showcase” event in May 2015, with 206 registrants from 41 MassGrad districts. Across all of these Work Group events, personnel from an average of 25 percent of MassGrad districts registered to participate in each event.

Responses to the annual member surveys indicated that from 72 to 100 percent of respondents agreed or strongly agreed that the Work Group events had a provided a variety of benefits, including useful resources and ideas for improving dropout prevention and re-engagement work in their own schools and districts, as well as useful opportunities for districts to learn from each other and from outside experts in dropout prevention and re-engagement work. In the 2015 survey, members were asked about their participation in future Work Group events. Seventy-five to 80 percent responded that they were very likely or moderately likely to attend in-person trainings, in-person networking/sharing opportunities, or facilitated site visits to other schools. Fifty-six percent said that they were very likely or moderately likely to participate in webinars. The average response rate across the four annual surveys was 21 percent; the findings should therefore be interpreted with caution, as they might not be fully representative of the Work Group community as a whole.

More extensive information about the Work Group is presented in the three MassGrad evaluation annual reports. This final report also includes detailed findings from the 2014–15 school year member survey, because that survey took place after the last annual report was written. Those findings include brief summaries of the topics and presentations in the many Work Group events.

**Leadership Council**

ESE established a MassGrad Leadership Council that included representatives from a broad range of state agencies and community, statewide, and national organizations. The Council’s purpose was to support and inform MassGrad activities, to provide expertise and training resources, and to connect the project’s services with other Massachusetts dropout reduction and college and career readiness initiatives.

Evaluation activities for the Leadership Council took place during the 2011–12 and 2012–13 school years and were then discontinued at ESE’s request. These activities included observations of Leadership Council meetings, interviews with Council members and ESE program managers, an annual online survey of all Council members, and review of relevant documents and records of attendance at Council meetings.

The Leadership Council met quarterly during this time, providing members with updates regarding MassGrad activities happening in schools and districts across the state. A primary success of the Leadership Council was bringing people together from across the state who shared an interest in dropout prevention and recovery.ESE said that the Council primarily served in an advisory capacity, and that ideas and suggestions offered by Council members had been useful in promoting and supporting the work of the MassGrad initiative.

A major impact of the Leadership Council was in relation to the MassGrad Coalitions. ESE had originally intended to create a single, state-wide coalition of nonprofit, business, and state government organizations that would meet quarterly during the five-year grant period. The Leadership Council suggested to ESE that the coalition would be more effective if it was locally based and targeted to the needs of local communities. In response, ESE substantially changed the coalition’s structure. This resulted in the four coalitions that are described elsewhere in the report.

An ongoing challenge was clarifying the Leadership Council’s role and making the best use of the proactive leadership and direction that members were eager to provide. Recognizing that members were very busy professionals, ESE attempted to limit requests of their time to serving in an advisory capacity during quarterly meetings, plus intermittent requests for consultation about specific issues. Engagement with Council activities was limited to some extent by low attendance at Council meetings. In an effort to promote sustained engagement, ESE restructured Council meetings to involve participants more actively and to facilitate action steps that advanced the Council’s agenda.

ESE said that they do not intend to continue the Leadership Council beyond the MassGrad funding period, because they were struggling with how to utilize members’ time most productively. However, they do plan to sustain working relationships with Council members. Additional information about the Leadership Council is presented in the MassGrad annual evaluation reports from the 2011–12 and 2012–13 school years, which will be available on ESE’s website.

**Planning Awards**

All MassGrad schools were eligible to apply for competitive awards of $5,000–$15,000 to conduct planning, needs assessment, and pilot interventions to serve students most likely to drop out of high school or who had already dropped out. Awardees were required to build on strategies, policies, and programs that were already in place and address gaps in existing services or procedures. Awards were made to 19 schools in 13 districts, with funding provided from April to December of 2011.

Evaluation activities for the Planning Awards took place only during the 2011–12 school year. These activities included interviews with ESE program managers, a review of final reports from each site, a survey, and observations of four Awardee Gatherings.

Almost all survey respondents agreed the Planning Awards enabled their districts to take meaningful steps toward addressing the needs of students who were most likely to drop out and/or students who had already dropped out, and provided a catalyst for changes that would yield larger improvements over time. Most also agreed that the funds were used to address pressing needs related to dropout prevention and/or recovery that otherwise probably would not have been addressed during the 2011–12 school year. Most respondents believed that small awards such as the Planning Awards can have a meaningful impact. One school administrator said, “This money is a great way to design and pilot a small, specific intervention. It was long enough for real planning to occur and covered enough time in the school year to observe implementation.”

Evaluation findings suggest that the Planning Awards assisted schools and districts in their efforts to initiate and/or coordinate dropout prevention and recovery efforts. ESE reported that the awards provided substantial return on a relatively small investment, with a few sites struggling, but most taking significant steps forward in organizing and implementing dropout prevention and recovery efforts. A success reported by a majority of awardees was increased communication related to dropout prevention and recovery. Many also reported that they achieved a better understanding of deficiencies in their early warning indicator and record-keeping systems, the needs of their at-risk students, and interventions that should be developed. Several awardees also reported adding new dropout prevention programs, expanding existing programs, and using their early warning indicator systems more actively to identify at-risk students. Challenges cited by multiple districts included availability of appropriate staff, establishing academic support systems, researching and analyzing data, and the substantial amount of time needed to plan the award work and coordinate schedules with stakeholders.

Additional information about the Planning Awards is presented in the school year 2011–12 MassGrad annual evaluation report, which will be available on ESE’s website, through a subpage of <http://www.doe.mass.edu/ccr>.

# Introduction

The Massachusetts Department of Elementary and Secondary Education (ESE) was awarded a federal High School Graduation Initiative (HSGI) grant for the years 2010–2015 to support statewide and local efforts focused on high school dropout prevention, intervention, and recovery. Known locally as MassGrad, the grant targeted the 133 Massachusetts high schools (“the MassGrad cohort”) that exceeded the statewide annual dropout rate of 2.9 percent during the 2008–09 school year. By the end of the grant period, the cohort had been reduced to 120 schools (“the current MassGrad cohort”), due to school closings and mergers.

These schools and their districts received funding and/or technical assistance to support initiatives at the school and district levels. They were also intended to benefit from statewide initiatives for sharing best practices as well as changes to state-level college and career readiness infrastructure. MassGrad funding supported four site-based programs—the Implementation Awards[[5]](#footnote-5), Planning Awards, MassGrad Coalitions, and Gateway to College—plus the state-level Leadership Council and Dropout Prevention and Re-engagement Work Group.

A primary aim of the MassGrad initiative was to reduce the statewide annual dropout rate to 1.7 percent by the end of the 2013–14 school year, from its 2008–09 level of 2.9 percent, as recommended in the 2009 “Making the Connection” report from the Massachusetts Graduation and Dropout Prevention and Recovery Commission.

MassGrad was part of a broader effort, as specified in the Delivery Plan of ESE’s College and Career Readiness group, to increase the Massachusetts 5-year high school graduation rate to 88.3 percent. The statewide annual dropout rate had dropped to 2.0 percent in the 2013–14 school year and to 1.9 percent in the 2014–15 school year. (ESE extended the evaluation by a year, in part to be able to consider an additional year of dropout rates.) For schools in the MassGrad cohort, the annual dropout rate fell from 6.2 percent in the 2008–09 school year to 4.0 percent in the 2013–14 school year and 3.7 percent in the 2014–15 school year.

The MassGrad evaluation was conducted by the UMass Donahue Institute (UMDI). The evaluation began during the fourth quarter of MassGrad’s first year, the 2010–11 school year, which coincided with the first major field activities. The 2011–12 school year was therefore the first full year of substantial evaluation activity, which continued through the 2014–15 school year.

This final evaluation report presents a summary of findings from the entire grant period. The body of the report primarily presents quantitative outcome findings. The findings from interviews, observations, open-ended survey items, and other non-quantitative data sources are primarily presented in two ways. First, the appendices of this report contain a series of summary briefs about several of the MassGrad initiatives. ESE asked UMDI to write these briefs for dissemination to a public audience. Second, the three annual evaluation reports contain extensive qualitative findings about each MassGrad initiative.[[6]](#footnote-6)

The following questions guided the evaluation of the overall MassGrad initiative. The evaluation of each MassGrad program utilized a version of these questions that was tailored to each program’s specific goals and characteristics.

**Process Questions**

1. In what ways have awardees implemented the program components described in their award applications? What are the major challenges to and facilitators of successful program implementation encountered by awardees? What midcourse corrections and attempts to overcome challenges have been undertaken? What additional steps are planned?
2. In what ways has ESE implemented the program components described in their grant application? What are the major challenges to and facilitators of program support and facilitation encountered by ESE? How have challenges been overcome and midcourse corrections undertaken? What additional steps are planned?
3. How do key project stakeholders rate and explain the quality, relevance, and effectiveness of major program components and services?
4. What infrastructure, systems, and processes were put in place to aid program sustainability during and beyond the award period? What are the greatest challenges and barriers to creating sustainability? In what ways have Implementation awardees integrated MassGrad programs with other school dropout prevention and re-engagement efforts?
5. In what ways is the Work Group changing the way local education professionals access and utilize resources for dropout prevention and re-engagement services?

**Outcome Questions**

1. What progress is being made toward: (a) the MassGrad goal of reducing the statewide annual dropout rate to 1.7 percent by the end of the 2013–14 school year, and (b) ESE’s goals of increasing the 5-year high school graduation rate to 88.3?
2. To what extent are students in awardee programs achieving improved outcomes in college and career readiness indicators?
3. At the school and district levels, do observed changes differ across student characteristics such as gender, race/ethnicity, free/reduced lunch status, ELL status, and special education status, and is there evidence that gaps are narrowing? Are services reaching students who are at the greatest risk of not graduating from high school?
4. What differences in program features, implementation, and contextual variables can be identified across programs whose levels of improvement differ substantially?
5. What is the relationship between extent of participation across MassGrad activities and achievement of targeted student outcomes? Are there differences in these outcomes between schools and districts that are participating in MassGrad activities and those that do not participate?

# MassGrad Initiative Impacts

This report presents findings from statistical analyses that compared the annual dropout rates, 4-year graduation rates, and MCAS achievement gaps of schools that participated in the MassGrad initiative with schools that did not participate. We used rigorous, quasi-experimental designs to draw strong conclusions about the effectiveness of the initiative (Cook and Campbell 1979).[[7]](#footnote-7)

The narrative below highlights changes in student performance relative to school years 2010–11 to 2014–15, when the MassGrad initiative took place. However, figures and tables include data from school year 2007–08 forward, to provide a better sense of change over time. Analyses included all high schools in the state that reported graduation and annual dropout rates from school years 2007–08 to 2014–15.

**Methods**

Two methods were used to assess the efficacy of the MassGrad intervention. Regression discontinuity (RD) analyses were completed to assess program impacts related to annual dropout rates and 4-year graduation rates. Comparative interrupted time series (CITS) analyses were completed to assess program impacts on achievement gaps. Both methods are briefly described below.

**Regression discontinuity analysis.** Regression discontinuity analysis is a rigorous quasi-experimental approach that can be used to assess the effects of programs. The RD design is a pre-post two group design characterized by its unique method of assigning cases to treatment and comparison groups solely based on a cutoff score on a pre-intervention measure. In addition, there are always two groups, usually one that receives the treatment and one that does not.

The RD design is so named because when the treatment is effective, there is a discontinuity in the regression lines at the cutoff score (i.e., a significant main effect). Regression estimates can also indicate a significant interaction between treatment status and pre-intervention scores. Generally, RD designs are not considered to be as strong as randomized experiments, but are considered superior to nonequivalent group designs. However, in situations where fully randomized experiments are not feasible, the RD design is considered to be a credible alternative method (Imbens and Lemieux 2008).

Regression discontinuity design requires that treatment assignment is as good as random at the threshold for treatment (Jacob et al. 2012). If this condition holds, then one can assume that those who were just above the threshold and received treatment are comparable to those who were just below the threshold and did not receive treatment, as treatment status is effectively random. Treatment assignment at the threshold can be as good as random if there is randomness in the assignment variable and the cases considered (e.g., schools) cannot perfectly manipulate their treatment status.

ESE established a cut-point to assign schools to the MassGrad intervention. All schools with an annual dropout rate above the state average of 2.9 percent in school year 2008–09 were selected to participate in MassGrad, and all schools with an annual dropout rate below the state average were not selected. This selection protocol allowed the research team to apply the RD design with a high degree of confidence, because it meets the criteria described above. It should be noted that while the selection criterion was clear, ESE invited non-MassGrad sites to participate in some MassGrad events (e.g., Dropout Prevention and Re-engagement Work Group gatherings). It is not possible to determine the extent to which the participation of non-MassGrad sites in these activities influenced the outcomes of the RD analyses.

UMDI included all MassGrad and non-MassGrad schools that had a pre-intervention score (2008–09 annual dropout rate) and post-intervention score (2014–15 annual dropout rate or 4-year graduation rate) in the RD analyses.[[8]](#footnote-8) Because the sample size available for these analyses was relatively small, a parametric approach (which utilizes all data points in the dataset) was used to complete the analyses.

**Comparative interrupted time series analysis.** The program’s impact on academic outcomes was assessed at the school level, comparing MassGrad schools to non-MassGrad schools. Performance on the grade 10 MCAS exam was used as the outcome indicator for these analyses because it was completed by most 10th graders in all program and comparison schools.

Differences in treatment and comparison schools were assessed using a CITS design. In this design, MCAS performance is observed across multiple school years before and after the introduction of the MassGrad intervention. The intervention is intended to “interrupt” the level of MCAS performance and/or the trend (i.e., the change over time) in MCAS performance that would have been observed in the absence of the intervention. Using both MassGrad schools and comparison schools is what makes the interrupted time series “comparative,” and this enables stronger inferences about what MCAS level and trends would have been observed in the absence of MassGrad. Technical descriptions of the CITS methods are presented in Appendix A.

ESE did not utilize random assignment to assign schools to the MassGrad initiative. Instead schools were required to have an average annual dropout rate higher than state average in school year 2008–09 to qualify for the award. Therefore, there were pre-intervention differences between MassGrad and comparison schools. Unfortunately, we cannot account for these differences through propensity score weighting (or other balancing procedures). While we recognize the potential validity threat this introduces, we still assess differences in trends for these models because they gauge the relative impact of the intervention and are illustrative of the impact as a whole.

Impacts were assessed on MCAS achievement gaps between student subgroups in all MassGrad schools. The gaps are defined as the difference between the average score of a reference group (i.e., a subgroup of students that typically scores higher than students in a comparison group on the MCAS) and the average score of a comparison group. In order to be included in the CITS analysis, schools needed to have 30 or more students being assessed in both reference and comparison groups in all school years from 2007–08 to 2014–15. The reference groups, followed by their comparison groups in parentheses, were: female (male), White (Asian, African American/Black, Hispanic/Latino), non-SWDs (SWDs), and non-FRL (FRL). Non-ELL/former ELL (ELL/former ELL) could not be run because there were too few intervention and comparison schools for which data were complete (i.e., 30 or more students in reference and comparison groups across all years) to make a meaningful comparison.

**Findings**

This section first presents a summary of 4-year and 5-year graduation rates and annual dropout rates for current MassGrad cohort schools and for the state. Next, results of regression discontinuity analyses that compared the 4-year graduation rate and annual dropout rate of current MassGrad schools to non-MassGrad schools are presented. Finally, results of CITS analyses that compare achievement gaps of current MassGrad cohort schools to those of non-MassGrad schools are presented.

**Graduation and dropout rate trends.** A primary objective of the MassGrad evaluation was to explore the degree to which changes in key student outcomes were attributable to MassGrad programs. As a step in that exploration, UMDI investigated trends in average 4-year and 5-year graduation rates and annual dropout rates for the state and for MassGrad schools. Those trends are summarized in the tables and figures below.

***4-year and 5-year graduation rates in the state and current MassGrad cohort schools*.**A goal of ESE’s college and career readiness delivery plan was to increase the state’s 5-year high school graduation rate to 88.3 percent by the end of the 2013–14 school year. UMDI calculated the 4-year and 5-year high school graduation rate for the state using the graduation cohort data files provided by ESE. The table below summarizes the results of those analyses. The 4-year graduation rate increased from 82.1 percent in 2009–10 to 87.3 percent in 2014–15. The 5-year graduation rate increased from 84.7 percent in 2009–10 to 88.5 percent in 2013–14. A five-year graduation rate is not reported for 2014–15 because the data required to calculate it were not available at the time this report was prepared. Three years of data prior to the MassGrad initiative are provided in the tables and figures below to demonstrate baseline trends in graduation and dropout rates.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **4-Year and 5-Year State Graduation Rates, SY08 to SY15** | | | | |
| Year | Number of Students | 4-Year Graduation Rate (%) | 5-Year Graduation Rate (%) | Difference Between Rates (%) |
| SY08 | 77,383 | 81.2 | 84.2 | 3.0 |
| SY09 | 77,038 | 81.5 | 84.0 | 2.5 |
| SY10 | 76,308 | 82.1 | 84.7 | 2.6 |
| SY11 | 74,307 | 83.4 | 86.3 | 2.9 |
| SY12 | 73,479 | 84.7 | 87.3 | 2.6 |
| SY13 | 74,537 | 85.0 | 87.7 | 2.7 |
| SY14 | 73,168 | 86.1 | 88.5 | 2.4 |
| SY15 | 72,474 | 87.3 | NA | NA |
| *Note:* “NA” means “not applicable.” | | | | |

The table below shows average 4-year and 5-year high school graduation rates for students in MassGrad cohort schools. The 4-year graduation rate increased from 67.6 percent in 2009–10 to 77.2 percent in 2014–15. The 5-year graduation rate increased from 71.7 percent in 2009–10 to 77.9 percent in 2013–14.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **4-Year and 5-Year Graduation Rates for Current MassGrad Cohort Schools, SY08 to SY15** | | | | |
| Year | Number of Students | 4-Year Graduation Rate (%) | 5-Year Graduation Rate (%) | Difference Between Rates (%) |
| SY08 | 26,173 | 68.3 | 72.9 | 4.6 |
| SY09 | 26,567 | 67.8 | 71.6 | 3.8 |
| SY10 | 25,986 | 67.6 | 71.7 | 4.1 |
| SY11 | 24,722 | 69.2 | 74.0 | 4.8 |
| SY12 | 24,141 | 71.7 | 75.8 | 4.1 |
| SY13 | 24,503 | 72.6 | 76.8 | 4.4 |
| SY14 | 23,798 | 74.2 | 77.9 | 3.7 |
| SY15 | 22,703 | 77.2 | NA | NA |
| *Note:* “NA” means “not applicable.” | | | | |

The figure below shows 4-year and 5-year high school graduation rates for the state and for MassGrad schools for 2007–08 to 2014–15. Graduation rates for the state are consistently higher than average graduation rates for MassGrad cohort schools. This is to be expected because MassGrad schools were specifically selected based on having higher than average annual dropout rates (and consequently lower than average 4-year and 5-year graduation rates).

| **4-Year and 5-Year Graduation Rates for the State and Current MassGrad Cohort Schools,**  **SY08 to SY15** |
| --- |
| 4-Year and 5-Year Graduation Rates for the State and Current MassGrad Cohort Schools,  SY08 to SY15 |

***Annual dropout rates in the state and current MassGrad cohort schools*.** A goal of MassGrad was to decrease the state’s annual dropout rate to 1.7 percent by the end of the 2013–14 school year. UMDI calculated annual dropout rates for the state using ESE’s 2007–08 to 2014–15 annual dropout cohort files. The table below summarizes the results of those analyses. The annual dropout rate decreased from 2.9 percent in 2009–10 to 1.9 percent in 2014–15.

|  |  |  |  |
| --- | --- | --- | --- |
| **Annual Dropout Rates for the State, SY08 to SY15** | | | |
| Year | Total HS Enrollment | Number of Dropouts | Annual Dropout Rate  (%) |
| SY08 | 295,937 | 9,959 | 3.4 |
| SY09 | 292,372 | 8,585 | 2.9 |
| SY10 | 290,502 | 8,296 | 2.9 |
| SY11 | 289,161 | 7,894 | 2.7 |
| SY12 | 287,055 | 7,051 | 2.5 |
| SY13 | 287,478 | 6,236 | 2.2 |
| SY14 | 292,794 | 5,746 | 2.0 |
| SY15 | 294,200 | 5,346 | 1.9 |

The table below shows annual dropout rates for current MassGrad cohort schools from school years 2007–08 through 2014–15. The average annual dropout rate for MassGrad cohort schools decreased from 5.9 percent in 2009–10 to 3.7 percent in 2014–15.

|  |  |  |  |
| --- | --- | --- | --- |
| **Annual Dropout Rates for Current MassGrad Cohort Schools, SY08 to SY15** | | | |
| Year | Total HS Enrollment | Number of Dropouts | Annual Dropout Rate  (%) |
| SY08 | 97,031 | 6,145 | 6.3 |
| SY09 | 94,759 | 5,766 | 6.1 |
| SY10 | 92,963 | 5,455 | 5.9 |
| SY11 | 92,239 | 5,233 | 5.7 |
| SY12 | 91,170 | 4,652 | 5.1 |
| SY13 | 90,039 | 3,988 | 4.4 |
| SY14 | 89,614 | 3,620 | 4.0 |
| SY15 | 89,304 | 3,299 | 3.7 |

The figure below shows annual dropout rates from school years 2007–08 to 2014–15 for the state and for current MassGrad cohort schools. MassGrad cohort schools were selected based on their higher than average annual dropout rates, so the figure necessarily indicates higher initial dropout rates for students in MassGrad cohort schools than for the state.

| **Annual Dropout Rates for the State and Current MassGrad Cohort Schools, SY08 to SY15** |
| --- |
| Annual Dropout Rates for the State and Current MassGrad Cohort Schools, SY08 to SY15 |

***4-year and 5-year cohort dropout rates in the state and current MassGrad cohort schools*.** The tables below summarize the 4-year and 5-year cohort dropout rates for the state and for current MassGrad schools. For the state, the 5-year cohort dropout rate decreased from 11.4 percent in 2009–10 to 7.6 percent in 2013–14. For MassGrad schools, the 5-year cohort dropout rate decreased from 20.9 percent in 2009–10 to 14.6 percent in 2013–14.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **4-Year and 5-Year Cohort Dropout Rates for the State, SY08 to SY15** | | | | | |
| Year | Number of Students | 4-Year Cohort  Dropout Rate (%) | 5-Year Cohort Dropout Rate (%) | | Difference Between Rates (%) |
| SY08 | 77,472 | 12.1 | 12.9 | | 0.8 |
| SY09 | 77,482 | 11.8 | 12.7 | | 0.9 |
| SY10 | 76,965 | 10.8 | 11.4 | | 0.6 |
| SY11 | 73,170 | 9.0 | 9.9 | | 0.9 |
| SY12 | 73,306 | 8.6 | 9.1 | | 0.5 |
| SY13 | 74,950 | 8.3 | 8.9 | | 0.6 |
| SY14 | 73,583 | 7.1 | 7.6 | | 0.5 |
| SY15 | 72,828 | 6.3 | NA | | NA |
| *Note:* “NA” means “not applicable.” | | | | | |
| **4-Year and 5-Year Cohort Dropout Rates for Current MassGrad Cohort Schools,**  **SY08 to SY15** | | | | | |
| Year | Number of Students | 4-Year Cohort Dropout Rate (%) | 5-Year Cohort Dropout Rate (%) | Difference Between Rates (%) | |
| SY08 | 26,173 | 20.8 | 22.4 | 1.6 | |
| SY09 | 26,567 | 20.7 | 22.7 | 2.0 | |
| SY10 | 25,986 | 19.6 | 20.9 | 1.3 | |
| SY11 | 24,722 | 17.5 | 19.1 | 1.6 | |
| SY12 | 24,141 | 16.9 | 17.8 | 0.9 | |
| SY13 | 24,503 | 15.7 | 16.8 | 1.1 | |
| SY14 | 23,798 | 13.6 | 14.6 | 1.0 | |
| SY15 | 22,703 | 11.9 | NA | NA | |
| *Note:* “NA” means “not applicable.” | | | | | |

The figure below shows the 4-year and 5-year cohort dropout rate for the state and for current MassGrad schools from 2007–08 to 2014–15.

| **4-Year and 5-Year Cohort Dropout Rates for the State and Current MassGrad Cohort Schools,**  **SY08 to SY15** |
| --- |
| 4-Year and 5-Year Cohort Dropout Rates for the State and Current MassGrad Cohort Schools,  SY08 to SY15 |

**Graduation and dropout rate analysis.** Regression discontinuity analyses were completed to determine if the MassGrad intervention impacted annual dropout and 4-year graduation rates of MassGrad schools. As explained above, the RD analysis allowed us to assess the post-MassGrad outcomes of schools that were close to the pre-MassGrad cut-score of a 2.9 percent annual dropout rate. A significant difference at the cut-point would indicate a “jump” (or discontinuity) in the regression lines for MassGrad and non-MassGrad schools whose dropout rates were close to the cut-point. A significant interaction between participation status and 2008–09 annual dropout-rates would indicate that the relationship between dropout rates before and after MassGrad was different for MassGrad and non-MassGrad schools. The 2008–09 annual dropout rate was used as the baseline for this analysis because ESE used data from that year to establish the cut-point.

The results, presented in the table below, indicate that there was not a significant difference between the school year 2014–15 annual dropout rates or 4-year graduation rates of MassGrad and non-MassGrad schools whose pre-MassGrad scores were close to the cut-point. In statistical terms, this means that there was not a significant “main effect,” as shown in the “MassGrad Participant” row of the table.

However, there was a small but statistically significant relationship between pre-intervention dropout rates and participation. In statistical terms, this means that there was a significant “interaction effect,” as shown in the “Interaction” row of the table. Specifically, post-intervention annual dropout rates decreased at a slower rate for MassGrad schools than for non-MassGrad schools. The “SY09 annual dropout rate” row of the table also shows that 2008–09 (pre-MassGrad) dropout rates were a significant predictor of 2014–15 (post-MassGrad) annual dropout rates. These findings are further described in the discussion section below.

While the first two rows of the table do not directly address the evaluation questions, they are included to present a fuller picture of the findings. The first row shows that the intercept of the estimated regression line for non-MassGrad participants was significantly greater than zero (p < 0.001). The second row of the table shows that the relationship between pre- and post-intervention annual dropout rates was statistically significant (p < 0.001).

The third and fourth rows of the table show results that directly address the evaluation questions. The third row shows that the relationship between MassGrad participation and post-MassGrad annual dropout rates was not statistically significant (i.e., no main effect). The fourth row of the table shows that the interaction between pre-MassGrad annual dropout rates and MassGrad participation was statistically significant (p < 0.001).

| **MassGrad Program Impacts on Dropout Rates** | | |
| --- | --- | --- |
| Variable | β-coefficient | Standard Error |
| Intercept | 0.91\*\*\* | 0.05 |
| SY09 Annual Dropout Rate (Transformed) | 0.59\*\*\* | 0.06 |
| MassGrad Participant | 0.02 | 0.07 |
| Interaction | 0.37\*\*\* | 0.08 |
| \*\*\**p* < .001.  *Note*: Beta-coefficients represent changes in annual dropout rates. See text for further detail. | | |

Beta-coefficients in the table above do not represent percent changes in annual dropout rates, because the data (pre- and post-intervention annual dropout rates) were transformed to accommodate the analysis.[[9]](#footnote-9) Proper interpretation of the beta-coefficients requires the reverse application of the transformations that were completed to accommodate the analysis.[[10]](#footnote-10) To aid in interpreting the beta-coefficients, we applied the transformation and regression equations to three sample data points (i.e., 2008–09 school year annual dropout rates) to estimate 2014–15 school year annual dropout rates. We chose three values near the cut-point because regression discontinuity analysis was used to assess differences in outcomes between treatment and comparison group schools whose pre-intervention annual dropout rates were near the cut-point. Inferences made about the performance of schools with 2008–09 annual dropout rates far from the cut-point would be less valid. After applying the transformations, we found that a 2008–09 annual dropout rate of 2.7 percent corresponded to a predicted 2014–15 annual dropout rate of 1.4 percent. Similarly, 2008–09 annual dropout rates of 2.9 percent and 3.1 percent corresponded to predicted 2014–15 annual dropout rates of 1.5 percent and 1.6 percent, respectively.

The figure below illustrates the findings of the regression discontinuity analysis. The vertical line in the figure (rising from ‘0’ on the x-axis) represents the MassGrad cut-point (i.e., 2.9 percent annual dropout rate in the 2008–09 school year) that separated MassGrad participants from non-participants. Each circle in the figure represents the pre-MassGrad and post-MassGrad annual dropout rates (transformed, as described in the previous paragraph) of one high school. The blue points represent non-MassGrad schools, and the green points represent MassGrad schools. The blue regression line fits the non-MassGrad schools, and the green regression line fits the MassGrad schools.

Two aspects of the regression lines illustrate the findings regarding the main effect and interaction effect discussed above. First, the intersection of the two regression lines falls directly on the vertical line representing the cut-point. This illustrates that there was no “discontinuity” or main effect. Second, the two regression lines have different slopes, and the difference in their slopes was statistically significant, corresponding to the significant interaction effect between 2008–09 school year annual dropout rates and MassGrad participation status.

To gauge the impact of the interaction effect we calculated the average 2008–09 annual dropout rate for MassGrad Schools close to the cut-point and then applied the regression equations to assess the difference in predicted 2014–15 annual dropout rates both with and without interaction. The 55 MassGrad schools with 2008–09 annual dropout rates between 2.9 percent and 4.9 percent were chosen as being “close” to the cut-point.[[11]](#footnote-11) The average 2008–09 annual dropout rate for these schools was 3.7 percent. If there had been no interaction effect, then the estimated 2014–15 annual dropout rate for this “average school” would have been 1.6 percent. Including the interaction effect resulted in an estimated 2014–15 annual dropout rate of 2.0 percent. This difference of 0.4 percentage points represents 1 additional dropout for every 250 students. That is, for every 250 students enrolled in a MassGrad school that had a 2008–09 annual dropout rate close to the cut-point, the findings indicate that there was 1 more dropout than would have been expected in the absence of the intervention.

| **Dropout Rates (Transformed) of MassGrad and non-MassGrad Schools in SY09 and SY15** |
| --- |
| Dropout Rates (Transformed) of MassGrad and non-MassGrad Schools in SY09 and SY15 |
| *Note*: Values on the x- and y-axes do not represent annual dropout rate percentages. The data have been transformed. See text for further detail. |

We do not present a table or figure summarizing the results of the regression discontinuity analysis conducted to assess the impact of MassGrad participation on 4-year graduation rates, because differences between MassGrad and non-MassGrad sites were not statistically significant.

**Achievement gap analysis.** Comparative interrupted time series (CITS) analyses compared MassGrad schools to non-MassGrad schools, to identify MassGrad program impacts on achievement gaps for the English Language Arts, Mathematics, and Science MCAS exams. The school years 2008–09 to 2010–11 were considered pre-intervention years, and school years 2011–12 to 2014–15 were considered post-intervention years.[[12]](#footnote-12) Statistically significant differences were identified in 3 out of 18 comparisons. The three statistically significant differences favored MassGrad schools over non-MassGrad schools, as shown in the table below. Appendix B presents results for all 18 comparisons, which included analyses for each of the six comparison groups (male, Asian, African American/Black, Hispanic/Latino, SWD, and FRL) for each of the three MCAS exams.

The first statistically significant difference was that the gap in English Language Arts MCAS scores between female and male students in the year immediately following intervention decreased by 0.9 percentage points more for MassGrad schools than non-MassGrad schools. Second, the achievement gap in mathematics between SWD and non-SWD students decreased in each of the three years following the first year of intervention at an average rate of 2.7 percentage points per year more for MassGrad schools than for non-MassGrad schools. Third, the achievement gap in science between SWD and non-SWD students decreased in the year immediately following intervention by 3.3 percentage points more for MassGrad schools than for non-MassGrad schools, and also decreased in each of the three years following the first year of intervention at an average rate of 2.1 percentage points per year more for MassGrad schools than for non-MassGrad schools.

| **MassGrad Program Impacts on MCAS Achievement Gaps,**  **Summary of Significant Findings by Subject** | | | |
| --- | --- | --- | --- |
| Model Description | | Achievement Gap Change After One Year1 | Annual Change in Achievement Gap1 |
| Subject | Subgroup or Measure |
| ELA | Female vs. Male | -0.9\* | NS |
| Mathematics | Non-SWD vs. SWD | NS | -2.7\*\*\* |
| Science | Non-SWD vs. SWD | -3.3\* | -2.1\*\*\* |
| \**p* < .05, \*\*\* *p* < .001.  *Note*: “NS” means “no significant findings.” Only statistically significant results are presented.  1Change in percentage points of students scoring proficient or advanced on MCAS. A positive number indicates an increase in the gap. | | | |

**Discussion**

Dropout rates decreased and graduation rates increased for both MassGrad and non-MassGrad schools during the MassGrad funding period. The state’s average annual dropout rate fell from 2.9 percent in 2008–09 to 1.9 percent in 2014–15, and the 4-year graduation rate rose from 81.5 percent in 2008–09 to 87.3 percent in 2014–15. For MassGrad schools, the average annual dropout rate fell from 6.1 percent in 2008–09 to 3.7 percent in 2014–15, and the 4-year graduation rate rose from 67.8 percent in 2008–09 to 77.2 percent in 2014–15.

These changes are substantial and have been celebrated in the Commonwealth. They also represent a narrowing of the gap in dropout rates between the MassGrad schools and the state average, from 3.2 percentage points when the MassGrad schools were selected to 1.8 percentage points at the end of the MassGrad intervention. With regard to the MassGrad initiative’s ambitious goal of reducing the annual dropout rate to 1.7 percent by 2013–14, most of the improvement has already occurred, but an additional reduction of 0.2 percentage points would be required to meet the goal.

Regression discontinuity analyses indicate that improvements in annual dropout rates and 4-year graduation rates during the MassGrad intervention period were not significantly different for MassGrad and non-MassGrad schools that were close to the participation cutoff of a 2.9 percent annual dropout rate in school year 2008–09. In other words, even though the dropout rates for all MassGrad schools fell more than for non-MassGrad schools, the difference was not statistically significant for MassGrad and non-MassGrad schools that were most similar to each other prior to the intervention—those whose dropout rate was closest to the cut-point that was used in the regression discontinuity analyses.

However, the interaction between 2008–09 annual dropout rates and MassGrad participation status was statistically significant. This means that the relationship between dropout rates before and after MassGrad was different for MassGrad and non-MassGrad schools. Specifically, MassGrad schools saw their annual dropout rates decrease at a slightly slower rate than non-MassGrad schools. This corresponded to one additional dropout for every 250 students enrolled in the MassGrad schools that had a pre-MassGrad annual dropout rate close to the cut-point (i.e., the 55 MassGrad schools that had the lowest annual dropout rates before the intervention).[[13]](#footnote-13)

There are multiple plausible explanations for this interaction finding. First, MassGrad schools with higher pre-intervention annual dropout rates may have been less successful at lowering their annual dropout rates than MassGrad schools with lower pre-intervention annual dropout rates. Second, non-MassGrad schools were invited to participate in some of the same interventions as MassGrad schools, particularly some of the college and career readiness webinars and Work Group gatherings. Third, it is likely that aspects of both MassGrad and non-MassGrad schools were not accounted for in this study that were relevant to dropout and graduation rates. For example, we know that dropout prevention became an increased focus of activity in the state during the MassGrad period, but we were not able to obtain systematic information about what dropout prevention strategies were employed by non-MassGrad schools. Similarly, MassGrad schools engaged in dropout prevention activities that fell outside of the MassGrad initiative that we were not able to measure. Finally, other interventions—such as those funded through the Massachusetts Race to the Top initiative, which occurred at the same time as MassGrad—may have impacted the dropout and graduation rates of MassGrad and non-MassGrad schools differently.

CITS analyses compared MassGrad schools to non-MassGrad schools to assess MassGrad’s impacts on MCAS achievement gaps. Statistically significant differences were identified in 3 out of 18 comparisons, all of which favored MassGrad schools over non-MassGrad schools. Specifically, after the first year of the MassGrad intervention, the achievement gap narrowed more for MassGrad than non-MassGrad schools between females and males (by 0.9 percentage points) in English language arts and between SWD and non-SWD students (by 3.3 percentage points) in science. Also, in the three years from school year 2012–13 to 2014–15, the achievement gap decreased at a faster rate in MassGrad schools than non-MassGrad schools between SWD and non-SWD students in mathematics (an average of 2.7 points per year) and science (an average of 2.1 points per year). For the remaining 15 analyses, there were no differences between MassGrad and non-MassGrad schools with regard to changes in achievement gaps.

These findings show that MassGrad did not have rapid, positive impacts on MCAS achievement gaps for most student subgroups. One factor potentially limiting MassGrad’s impact in relation to non-MassGrad schools is the Commonwealth’s adoption of the Common Core State Standards in 2010. This policy change included professional development sessions on the new standards during school year 2011 for teachers state-wide, as well as an expectation that all schools would align their curricula to the standards by the start of school year 2012–13. This change overlapped with the MassGrad initiative period, which may have led both MassGrad and non-MassGrad schools to begin working with more rigorous curricula at the same time that the MassGrad programs were being implemented. Additional academic interventions, such as the Pre-AP teacher training program implemented by many MassGrad and non-MassGrad schools as part of the Massachusetts Race to the Top initiative, may also have disproportionately impacted MassGrad and non-MassGrad schools.

# Implementation Awards

MassGrad schools that had 20 or more dropouts in the 2008–09 school year were eligible to apply for competitive awards, called “Implementation Awards,” to implement dropout prevention, intervention, and recovery programs using their choice of up to three out of seven strategies that ESE designated as evidence based. These schools would also receive technical assistance from a vendor hired by ESE. Funding was for up to $100,000 per year. Awards were made to 28 schools in 17 districts. All awards were made for three years (through September 30, 2013), and all schools were invited to apply for two additional years of funding, which would be awarded based on exemplary practices. All awardees applied for and were awarded additional funding for the 2013–14 and 2014–15 school years.

Each awardee implemented from two to four of the seven Implementation strategies. (ESE gave some sites permission to implement more than three strategies.) The resulting programs spanned an extensive range of designs for each strategy. Many of the programs utilized common elements, but the programs did not comprise a set of prescribed models that were replicated across sites.

ESE’s support of the Implementation awardees involved responding to program needs, conducting site visits, and providing technical assistance. ESE’s technical assistance included collaborating with vendors to host Awardee Gatherings and open houses for awardees to visit each other’s schools, as well as sharing information via the MassGrad Minute newsletter, the MassGrad website, and evaluation briefs focused on Implementation Award strategies.

UMDI’s data collection activities included more than 200 on-site and phone interviews with personnel in awardee schools and districts, ESE program managers, and the technical assistance vendor. We also observed two to four technical assistance events annually and reviewed awardee’s proposals, progress reports, and annual participant data submissions.

Brief descriptions of the seven Implementation strategies follow:

1. *Adult advocates for student support.* Graduation coaches and/or re-engagement coaches supported positive student outcomes through prevention, intervention, and recovery efforts. These staff and associated programming assisted students in meeting personal and academic needs through a meaningful and sustained personal relationship with a trained adult.
2. *Alternative pathways to a high school diploma.*Sites developed new programs or schools that created smaller, more tailored environments to address the specific needs of certain populations of students and provide alternative pathways to a high school diploma.
3. *Credit recovery and acceleration.* Sites helped students accelerate learning and credit accumulation by providing meaningful instructional hours outside of the traditional classroom or beyond the typical school day. Models included online courses and more traditional summer courses.
4. *Expansion of the school year and summer transition.* Programs took place after school, on the weekend, during school vacation weeks, or over the summer. The programs supported academic skill development, provided enrichment and socio-emotional support, facilitated an effective transition to high school, supported recovery of course credit, or accelerated credit accumulation.
5. *School climate and socio-emotional systems of support.* Sites implemented programs that helped students understand and regulate their emotions and interactions with peers and adults. These skills were intended to reduce problematic behavior by teaching students how to interact and communicate positively, and to strengthen their problem-solving and decision-making skills. Programs that addressed external social factors, such as family concerns or substance abuse issues, were also included in this category.
6. *Service-learning and work-based learning.* Through service-learning, students built skills—such as entrepreneurship, leadership, and teamwork—as they worked with adults in the school, community partners, and local businesses to discover needs in their communities and identify and implement solutions to address them. In work-based learning programs, students completed summer jobs, internships, or part-time employment that connected learning from the classroom with the workplace, with guidance from school personnel.
7. *Programs for transient students and English language learners.*Sites implemented programs to benefit students who tend to be highly mobile due to recent immigration, migrant work, homelessness, or economic factors. Programs for English language learners (ELLs) were also supported under this strategy.

Extensive qualitative information about the seven Implementation strategies is provided in the three MassGrad annual evaluation reports and in case studies of three Implementation Award sites (UMass Donahue Institute 2015a, 2015b, 2015c). Summary briefs were also written for five of the strategies: adult advocates (Appendix E1), alternative pathways (Appendix E2), expansion of the school year (Appendix E3), school climate and socio-emotional systems of support (Appendix E4), and service-learning and work-based learning (Appendix E5). Detailed findings related to the credit recovery strategy are also available in a published summary brief for teachers (UMass Donahue Institute 2015d), as well as in a policy report and a second summary brief that are in press and will be available at <http://www.nmefoundation.org/resources>. These sources all discuss promising practices, successes, and challenges. (A separate deliverable was not written for the seventh strategy—programs for transient students and English language learners—which was selected by only two districts. Their work was integrated with other strategies and is described in the three annual reports and summary briefs.)

Detailed quantitative methods and findings regarding the implementation and outcomes of the Implementation Award programs are provided next. Findings are presented that compare the graduation, dropout, attendance, and MCAS performance of students who participated in Implementation programs with students who did not participate. We used rigorous, quasi-experimental, matched comparison group designs to draw strong conclusions about the effectiveness of the programs (Cook and Campbell 1979). Treatment and comparison groups were matched on gender, race/ethnicity, eligibility for free or reduced-price lunch, English language learner status, disability status, grade level, rate of school attendance, and pre-intervention test performance. Technical descriptions of the statistical methods are presented in Appendix C.

Analyses included all students (N=12,454) who participated during school years 2011–12, 2012–13, and 2013–14.[[14]](#footnote-14) The comparison group included all students (N=48,615) at the same sites who did not participate. Participation data from school year 2014–15 were not included in the study because only 12 out of 28 sites submitted data for that school year. Effects were assessed during students’ final year of participation and one, two, and three years later. Depending on the time period and outcome indicator, different groups of students were included in different analyses. For example:

* A student who was in 12th grade during the 2010–11 school year (and for whom 2010–11 was their final year of participation) was included in all graduation analyses (i.e., during the final year of participation, one year later, two years later, and three years later).
* A student who was in 9th grade during the 2010–11 school year (and for whom 2010–11 was their final year of participation) was only included in the graduation analyses three years after participation because that was the first year in which that student could graduate.
* Dropout status during the final year of participation was assessed for students in all three study years, whereas dropout status two years after participation was assessed only for students whose final year of participation was 2011–12 or 2012–13.
* Graduation status during the final year of participation could only be assessed for students whose final year of participation was 12th grade.
* Grade 10 MCAS scores were assessed for students who were in 9th grade in 2011–12, 2012–13, or 2013–14.

Students were not randomly assigned to Implementation programs. To minimize any differences that may have existed between the treatment and comparison groups prior to the intervention, rigorous propensity score weighting procedures were used to weight each of the comparison students according to their similarity to students in the treatment group (Rubin 2001).

**Graduation and Dropout Rate Trends**

**Implementation Awards: 4-year and 5-Year graduation rates.** The table below summarizes the 4-year and 5-year graduation rate for Implementation schools during the MassGrad funding period and for three additional baseline years, from school years 2007–08 to 2014–15. The 4-year graduation rate increased from 60.4 percent in 2009–10 to 70.8 percent in 2014–15, and the 5-year graduation rate increased from 64.7 percent in 2009–10 to 71.7 percent in 2013–14.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **4-Year and 5-Year Graduation Rates for Implementation Schools, SY08 to SY15** | | | | |
| Year | Number of Students | 4-Year Graduation Rate (%) | 5-Year Graduation  Rate (%) | Difference Between Rates (%) |
| SY08 | 7,440 | 62.6 | 67.4 | 4.8 |
| SY09 | 7,588 | 61.2 | 65.2 | 4.0 |
| SY10 | 7,579 | 60.4 | 64.7 | 4.3 |
| SY11 | 7,175 | 61.3 | 66.9 | 5.6 |
| SY12 | 6,913 | 65.7 | 70.1 | 4.4 |
| SY13 | 7,108 | 65.3 | 70.5 | 5.2 |
| SY14 | 6,876 | 67.7 | 71.7 | 4.0 |
| SY15 | 6,441 | 70.8 | NA | NA |
| *Note:* “NA” means “not applicable.” | | | | |

The figure below shows the trends in 4-year and 5-year graduation rates for Implementation Award schools from school years 2007–08 to 2014–15.

| **4-Year and 5-Year Graduation Rates for Implementation Schools, SY08 to SY15** |
| --- |
| 4-Year and 5-Year Graduation Rates for Implementation Schools, SY08 to SY15 |

**Implementation Awards: Annual dropout rates.** The table below summarizes the annual dropout rates for Implementation schools from school years 2007–08 to 2014–15. The dropout rate decreased from 7.7 percent in 2009–10 to 4.8 percent in 2014–15.

|  |  |  |  |
| --- | --- | --- | --- |
| **Annual Dropout Rates for Implementation Schools, SY08 to SY15** | | | |
| Year | Total HS Enrollment | Number of Dropouts | Annual Dropout  Rate (%) |
| SY08 | 27,325 | 2,184 | 8.0 |
| SY09 | 26,706 | 2,159 | 8.1 |
| SY10 | 26,223 | 2,008 | 7.7 |
| SY11 | 26,013 | 2,015 | 7.7 |
| SY12 | 26,816 | 1,588 | 5.9 |
| SY13 | 25,219 | 1,390 | 5.5 |
| SY14 | 25,132 | 1,361 | 5.4 |
| SY15 | 25,003 | 1,203 | 4.8 |

The figure below shows the trend in annual dropout rate for Implementation schools from school years 2007–08 to 2014–15.

| **Annual Dropout Rates for Implementation Schools, SY08 to SY15** |
| --- |
| Annual Dropout Rates for Implementation Schools, SY08 to SY15 |

**Implementation Awards: 4-Year and 5-Year cohort dropout rates.** The table below summarizes the 4-year and 5-year cohort dropout rates for Implementation schools from school years 2007–08 to 2014–15. The 4-year cohort dropout rate decreased from 24.4 percent in 2009–10 to 14.9 percent in 2014–15, and the 5-year cohort dropout rate decreased from 26.3 percent in 2009–10 to 18.4 percent in 2013–14.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **4-Year and 5-Year Cohort Dropout Rates for Implementation Schools, SY08 to SY15** | | | | |
| Year | Number of Students | 4-Year Cohort Dropout Rate (%) | 5-Year Cohort Dropout Rate (%) | Difference Between Rates (%) |
| SY08 | 7,440 | 24.4 | 26.3 | 1.9 |
| SY09 | 7,588 | 24.8 | 27.0 | 2.2 |
| SY10 | 7,579 | 24.4 | 26.3 | 1.9 |
| SY11 | 7,175 | 21.4 | 23.7 | 2.3 |
| SY12 | 6,913 | 20.4 | 21.5 | 1.1 |
| SY13 | 7,108 | 19.2 | 20.6 | 1.4 |
| SY14 | 6,876 | 16.9 | 18.4 | 1.5 |
| SY15 | 6,441 | 14.9 | NA | NA |

The figure below presents the trend in 4-year and 5-year cohort dropout rates for Implementation schools from school years 2007–08 to 2014–15.

| **4-year and 5-Year Cohort Dropout Rates for Implementation Schools, SY08 to SY15** |
| --- |
| 4-year and 5-Year Cohort Dropout Rates for Implementation Schools, SY08 to SY15 |

**Program Participation**

The table below shows the total number of students by site participating in each of the seven Implementation strategies from school years 2011–12 to 2014–15.[[15]](#footnote-15) Submissions were incomplete during the 2014–15 school year, with only 12 out of 28 sites reporting student participation. As a result some of the cells represent participation through 2013–14 only, as indicated in the table. The three strategies with the greatest number of participants were credit recovery (N=6,787), alternative pathways (N=5,431), and adult advocates (N=4,980). Some students participated in more than one strategy, and a small number of students participated in MassGrad programs at multiple sites due to transferring to a different school or district.

Although 28 schools received Implementation Awards, ESE granted the Springfield Public School District permission to use a portion of their Implementation Award funds at a 29th site, the High School Completion Program, during the 2013–14 and 2014–15 school years. The High School Completion Program is included as a separate row in the table below (as well as other tables, as relevant). However, the program was not an official school, so its students were assigned to their sending school for some analyses as needed.

| **School Year and Summer Participation in Implementation Award Programs By School and Strategy, SY12 to SY15** | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| District | School | Total | Adult Advocates  (n) | Alternative  Pathways  (n) | Credit Recovery  (n) | School-Year  Expansion  (n) | School Climate  (n) | Service Learning  (n) | Transient ELL  (n) |
| Attleboro | Attleboro High1 | 132 | 0 | 132 | 0 | 0 | 132 | 132 | 0 |
| Boston | Boston Adult Tech Academy1 | 882 | 652 | 0 | 368 | 0 | 0 | 344 | 269 |
| Boston | Boston Day and Evening Acad | 1,305 | 0 | 822 | 646 | 969 | 0 | 0 | 0 |
| Boston | Charlestown High1 | 779 | 0 | 205 | 0 | 527 | 0 | 47 | 0 |
| Boston | Comm Acad of Sci and Health1 | 415 | 351 | 0 | 255 | 0 | 324 | 0 | 0 |
| Brockton | BB Russell | 197 | 192 | 145 | 0 | 81 | 0 | 0 | 0 |
| Brockton | Champion High | 128 | 0 | 118 | 0 | 0 | 0 | 52 | 0 |
| Brockton | Edison Academy | 904 | 0 | 828 | 0 | 107 | 0 | 0 | 0 |
| Chelsea | Chelsea High1 | 504 | 218 | 0 | 174 | 146 | 0 | 0 | 0 |
| Fall River | BMC Durfee High1 | 1,005 | 0 | 0 | 1,005 | 0 | 0 | 0 | 0 |
| Fall River | Resiliency Preparatory School1 | 436 | 0 | 0 | 436 | 0 | 0 | 0 | 0 |
| Holyoke | Holyoke High1 | 630 | 356 | 0 | 265 | 118 | 0 | 0 | 0 |
| Holyoke | Wm J Dean Voc Tech | 650 | 536 | 0 | 95 | 72 | 0 | 0 | 0 |
| Lawrence2 | Business Mgmt & Finance | 2,477 | 0 | 0 | 1,366 | 607 | 0 | 0 | 406 |
| HS Learning Center |
| International High |
| Lowell | Lowell High1 | 117 | 117 | 117 | 0 | 0 | 117 | 0 | 0 |
| Malden | Malden High1 | 718 | 562 | 0 | 368 | 275 | 454 | 128 | 0 |
| North Adams | Drury High | 419 | 217 | 0 | 173 | 0 | 0 | 54 | 0 |
| Phoenix Charter | Phoenix Charter | 885 | 254 | 0 | 0 | 0 | 885 | 0 | 0 |
| Pittsfield | Pittsfield High1 | 288 | 0 | 27 | 223 | 191 | 0 | 58 | 0 |
| Pittsfield | Taconic High1 | 279 | 0 | 15 | 199 | 186 | 0 | 70 | 0 |
| Quabbin | Quabbin Regional1 | 239 | 230 | 138 | 0 | 0 | 0 | 28 | 0 |
| Somerville | Somerville High1 | 404 | 0 | 0 | 352 | 0 | 0 | 0 | 0 |
| Springfield | HS of Commerce1 | 779 | 479 | 453 | 63 | 0 | 0 | 0 | 0 |
| Springfield | HS of Science and Technology | 1,210 | 0 | 851 | 334 | 0 | 0 | 0 | 0 |
| Springfield | Putnam Voc Tech | 1,231 | 203 | 950 | 207 | 0 | 0 | 0 | 0 |
| Springfield | High School Completion Program1 | 430 | 310 | 329 | 181 | 0 | 0 | 0 | 0 |
| Whitman-Hanson | Whitman Hanson Regional1 | 282 | 282 | 259 | 68 | 0 | 281 | 58 | 0 |
| **TOTAL** |  | **17,827** | **4,980** | **5,431** | **6,787** | **3,320** | **2,198** | **973** | **684** |
| *Note*: The High School Completion Program was counted as a 29th site for the 2013–14 and 2014–15 school years. (See explanation in report narrative.)  1Data were not submitted for school year 2014–15, so totals reflect student participation from school years 2011–12 through 2013–14.  2Lawrence totals are combined across schools. | | | | | | | | | |

**Student Participation by Selected Subgroups.** The evaluation sought to determine whether program services reached students who were at thegreatest risk and most difficult to engage; whetherobserved changes at the school and district levels differed across student characteristics such as gender,race/ethnicity, FRL status, ELL status, and special education status; whether achievement gapsnarrowed; and which strategies were associated with the greatest changes for underserved student subgroups. The five tables in this section address those questionsin relation to the Implementation Awards.

The first table summarizes total school year and summer enrollment in Implementation programs from school years 2011–12 to 2014–15 by school and by strategy. The four subsequent tables provide data on student participation in Implementation programs by school from school years 2011–12 to 2013–14. These four tables include information about:

1. Early Warning Indicator System (EWIS) risk level
2. Students with disabilities, ELL status, FRL status, and gender
3. Race/ethnicity
4. Grade level

Two additional tables are provided, outlining total enrollment by demographics and by Implementation strategy. Weighted averages are reported in each of the tables to show the percentage of all Implementation participants who were identified as being a member of each subgroup. In the four awardee-level tables, unweighted averages were also included in order to provide a more complete picture of the demographics than could be obtained through the weighted average alone. Although the weighted and unweighted averages were within a few percentage points of each other in most cases, the existence of some larger differences justified including both averages. The three largest state-wide differences were for students eligible for free or reduced-price lunch (82 percent weighted versus 76 percent unweighted), Hispanic students (51 percent weighted versus 37 percent unweighted), and White students (21 percent weighted versus 31 percent unweighted). With regard to the question of whether program services are reaching the students who are at greatest risk, the first table below shows that 48 percent of students served were “high risk,” and an additional 28 percent were “moderate risk” as designated by EWIS.

| **State-wide Student Participation in Implementation Award Programs by Subgroup, SY12 to SY14** | |
| --- | --- |
| Characteristic | Average (%) |
| Early Warning Indicator System Risk Level | |
| EWIS High Risk | 48 |
| EWIS Moderate Risk | 28 |
| EWIS Low Risk | 24 |
| Special Populations | |
| Students with Disabilities | 20 |
| English Language Learners | 18 |
| Free or Reduced-Price Lunch | 82 |
| Male | 54 |
| Female | 46 |
| Race/Ethnicity | |
| African American/Black | 23 |
| Asian | 2 |
| Hispanic/Latino | 51 |
| Multi-Race, Non-Hispanic or Latino | 2 |
| American Indian or Alaskan Native | 0 |
| Native Hawaiian or Pacific Islander | 0 |
| White | 21 |
| Grade Level | |
| 8th Grade | 5 |
| 9th Grade | 37 |
| 10th Grade | 19 |
| 11th Grade | 18 |
| 12th Grade | 22 |

| **Student Participation in MassGrad Implementation Award Programs, by School and EWIS Risk Level, SY12 to SY14** | | | | | |
| --- | --- | --- | --- | --- | --- |
| District | School | N | High Risk (%) | Moderate Risk (%) | Low Risk (%) |
| Attleboro | Attleboro High | 104 | 24 | 62 | 14 |
| Boston | Boston Adult Tech Academy | 599 | 73 | 6 | 22 |
| Boston | Boston Day and Evening Acad | 645 | 72 | 6 | 22 |
| Boston | Charlestown High | 540 | 44 | 34 | 23 |
| Boston | Comm Acad of Sci and Health | 366 | 44 | 33 | 22 |
| Brockton | BB Russell | 96 | 54 | 24 | 23 |
| Brockton | Champion High | 86 | 44 | 38 | 18 |
| Brockton | Edison Academy | 349 | 44 | 37 | 19 |
| Brockton | Brockton High | 63 | 42 | 58 | 0 |
| Chelsea | Chelsea High | 397 | 40 | 33 | 26 |
| Fall River | BMC Durfee High | 789 | 35 | 35 | 30 |
| Fall River | Resiliency Preparatory School | 291 | 69 | 16 | 15 |
| Holyoke | Holyoke High | 450 | 57 | 21 | 22 |
| Holyoke | Wm J Dean Voc Tech | 318 | 46 | 25 | 30 |
| Lawrence1 | Business Mgmt and Finance | 1,995 | 45 | 23 | 33 |
| HS Learning Center |
| International High |
| Lowell | Lowell High | 75 | 70 | 12 | 19 |
| Malden | Malden High | 527 | 44 | 27 | 29 |
| North Adams | Drury High | 214 | 37 | 39 | 24 |
| Phoenix Charter | Phoenix Charter Academy | 536 | 58 | 10 | 32 |
| Pittsfield | Pittsfield High | 232 | 25 | 60 | 15 |
| Pittsfield | Taconic High | 230 | 22 | 60 | 18 |
| Quabbin | Quabbin Regional | 211 | 19 | 63 | 18 |
| Somerville | Somerville High | 290 | 42 | 37 | 22 |
| Springfield | HS of Commerce | 732 | 55 | 28 | 18 |
| Springfield | HS of Science and Technology | 996 | 59 | 18 | 23 |
| Springfield | Putnam Voc Tech | 809 | 28 | 48 | 24 |
| Springfield | High School Completion Program | 302 | 77 | 9 | 14 |
| Whitman-Hanson | Whitman-Hanson Regional | 212 | 42 | 38 | 20 |
| Total and Weighted Average | | 12,454 | 48 | 28 | 24 |
| Total and Unweighted Average | | 12,454 | 47 | 32 | 21 |
| *Note*: Risk level information could not be identified for 624 students. These students were included in the “N” column but were not used to calculate the percentages reported in the table. The High School Completion Program was counted as a 29th site for the 2013–14 and 2014–15 school years. (See explanation in report narrative.)  1Lawrence totals are combined across schools. | | | | | |

| **Student Participation in MassGrad Implementation Award Programs by School and Special Population, SY12 to SY14** | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| District | School | N | Free or Reduced-price  Lunch (%) | ELL  (%) | SWD  (%) | Male  (%) | Female  (%) | High Needs  (%) |
| Attleboro | Attleboro High | 104 | 70 | 6 | 35 | 70 | 30 | 83 |
| Boston | Boston Adult Tech Academy | 599 | 72 | 51 | 4 | 52 | 48 | 71 |
| Boston | Boston Day and Evening Acad | 645 | 100 | 5 | 16 | 42 | 58 | 91 |
| Boston | Charlestown High | 540 | 90 | 14 | 13 | 52 | 48 | 88 |
| Boston | Comm Acad of Sci and Health | 366 | 78 | 26 | 24 | 50 | 50 | 83 |
| Brockton | BB Russell | 96 | 74 | 6 | 24 | 59 | 41 | 74 |
| Brockton | Champion High | 86 | 87 | 1 | 29 | 51 | 49 | 91 |
| Brockton | Edison Academy | 349 | 68 | 26 | 18 | 57 | 43 | 63 |
| Brockton | Brockton High | 63 | 71 | 6 | 27 | 44 | 56 | 84 |
| Chelsea | Chelsea High | 397 | 75 | 10 | 15 | 61 | 39 | 83 |
| Fall River | BMC Durfee High | 789 | 81 | 7 | 23 | 59 | 41 | 79 |
| Fall River | Resiliency Preparatory School | 291 | 81 | 0 | 19 | 60 | 40 | 82 |
| Holyoke | Holyoke High | 450 | 79 | 12 | 21 | 54 | 46 | 88 |
| Holyoke | Wm J Dean Voc Tech | 318 | 96 | 29 | 33 | 48 | 52 | 95 |
| Lawrence1 | Business Mgmt and Finance | 1,995 | 90 | 30 | 21 | 55 | 45 | 87 |
| HS Learning Center |
| International High |
| Lowell | Lowell High | 75 | 67 | 16 | 12 | 55 | 45 | 74 |
| Malden | Malden High | 527 | 71 | 16 | 24 | 61 | 39 | 76 |
| North Adams | Drury High | 214 | 71 | 1 | 25 | 55 | 45 | 73 |
| Phoenix Charter | Phoenix Charter | 536 | 76 | 28 | 14 | 48 | 52 | 80 |
| Pittsfield | Pittsfield High | 232 | 66 | 6 | 28 | 57 | 43 | 71 |
| Pittsfield | Taconic High | 230 | 70 | 1 | 25 | 64 | 36 | 73 |
| Quabbin | Quabbin Regional | 211 | 33 | 1 | 27 | 58 | 42 | 46 |
| Somerville | Somerville High | 290 | 71 | 17 | 21 | 58 | 42 | 78 |
| Springfield | HS of Commerce | 732 | 89 | 19 | 21 | 53 | 47 | 85 |
| Springfield | HS of Science and Technology | 996 | 90 | 12 | 18 | 53 | 47 | 85 |
| Springfield | Putnam Voc Tech | 809 | 90 | 14 | 23 | 48 | 52 | 89 |
| Springfield | High School Completion Program | 302 | 80 | 18 | 30 | 48 | 52 | 75 |
| Whitman-Hanson | Whitman-Hanson Regional | 212 | 48 | 0 | 38 | 60 | 40 | 67 |
| Total and Weighted Average | | 12,454 | 82 | 18 | 20 | 54 | 46 | 82 |
| Total and Unweighted Average | | 12,454 | 76 | 13 | 22 | 55 | 45 | 76 |
| *Note*: Demographic information could not be identified for 624 students. These students were included in the “N” column but were not used to calculate the percentages reported in the table. The High School Completion Program was counted as a 29th site for the 2013–14 and 2014–15 school years. (See explanation in report narrative.)  1Lawrence totals are combined across schools. | | | | | | | | |

| **Student Participation in MassGrad Implementation Award Programs by School and Special Population, SY12 to SY14** | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| District | School | N | African Amer./Black (%) | Asian (%) | Hispanic/Latino (%) | Multi-Race Non-Hisp/Lat (%) | Amer. Ind. or Alaska Nat. (%) | Nat. Haw. Or Pacif. Isl. (%) | White (%) |
| Attleboro | Attleboro High | 104 | 6 | 2 | 17 | 1 | 0 | 0 | 74 |
| Boston | Boston Adult Tech Academy | 599 | 65 | 4 | 28 | 1 | 0 | 0 | 2 |
| Boston | Boston Day and Evening Academy | 645 | 50 | 2 | 30 | 3 | 1 | 5 | 10 |
| Boston | Charlestown High | 540 | 54 | 9 | 28 | 2 | 1 | 0 | 8 |
| Boston | Comm Acad of Sci & Health | 366 | 77 | 1 | 18 | 3 | 0 | 0 | 2 |
| Brockton | BB Russell | 96 | 58 | 1 | 17 | 4 | 2 | 1 | 17 |
| Brockton | Champion High | 86 | 55 | 1 | 15 | 1 | 0 | 0 | 28 |
| Brockton | Edison Academy | 349 | 65 | 0 | 15 | 1 | 1 | 0 | 18 |
| Brockton | Brockton High | 63 | 70 | 2 | 13 | 0 | 0 | 0 | 16 |
| Chelsea | Chelsea High | 397 | 11 | 1 | 79 | 0 | 0 | 0 | 8 |
| Fall River | BMC Durfee High | 789 | 11 | 4 | 21 | 1 | 0 | 0 | 63 |
| Fall River | Resiliency Preparatory School | 291 | 10 | 3 | 21 | 1 | 1 | 0 | 64 |
| Holyoke | Holyoke High | 450 | 6 | 0 | 76 | 0 | 0 | 0 | 17 |
| Holyoke | Wm J Dean Voc Tech | 318 | 2 | 0 | 91 | 0 | 0 | 0 | 7 |
| Lawrence1 | Business Mgmt and Finance | 1,995 | 1 | 1 | 93 | 0 | 0 | 0 | 4 |
| HS Learning Center |
| International High |
| Lowell | Lowell High | 75 | 11 | 24 | 32 | 1 | 0 | 0 | 32 |
| Malden | Malden High | 527 | 30 | 9 | 25 | 5 | 1 | 0 | 30 |
| North Adams | Drury High | 214 | 7 | 1 | 5 | 7 | 1 | 1 | 79 |
| Phoenix Charter | Phoenix Charter | 536 | 22 | 1 | 65 | 1 | 0 | 0 | 11 |
| Pittsfield | Pittsfield High | 232 | 18 | 0 | 12 | 6 | 0 | 0 | 64 |
| Pittsfield | Taconic High | 230 | 11 | 1 | 7 | 7 | 0 | 0 | 73 |
| Quabbin | Quabbin Regional | 211 | 1 | 1 | 6 | 4 | 1 | 0 | 88 |
| Somerville | Somerville High | 290 | 22 | 4 | 48 | 1 | 0 | 0 | 25 |
| Springfield | HS of Commerce | 732 | 24 | 2 | 66 | 2 | 0 | 0 | 7 |
| Springfield | HS of Science and Technology | 996 | 20 | 1 | 69 | 2 | 0 | 0 | 8 |
| Springfield | Putnam Voc Tech | 809 | 19 | 2 | 65 | 2 | 0 | 0 | 12 |
| Springfield | High School Completion Program | 302 | 17 | 0 | 70 | 1 | 0 | 0 | 12 |
| Whitman-Hanson | Whitman-Hanson Regional | 212 | 5 | 0 | 3 | 4 | 1 | 0 | 88 |
| Total and Weighted Average | | 12,454 | 23 | 2 | 51 | 2 | 0 | 0 | 21 |
| Total and Unweighted Average | | 12,454 | 27 | 3 | 37 | 2 | 0 | 0 | 31 |
| *Note*: Demographic information could not be identified for 624 students. These students were included in the “N” column but were not used to calculate the percentages reported in the table. The High School Completion Program was counted as a 29th site for the 2013–14 and 2014–15 school years. (See explanation in report narrative.)  1Lawrence totals are combined across schools. | | | | | | | | | |

| **Student Participation in MassGrad Implementation Award Programs by School and Grade, SY12 to SY14** | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| District | School | N | 8th grade  (%) | 9th grade  (%) | 10th grade  (%) | 11th grade  (%) | 12th grade  (%) |
| Attleboro | Attleboro High | 104 | 0 | 79 | 21 | 0 | 0 |
| Boston | Boston Adult Tech Academy | 599 | 0 | 0 | 0 | 40 | 60 |
| Boston | Boston Day and Evening Acad | 645 | 0 | 18 | 8 | 30 | 45 |
| Boston | Charlestown High | 540 | 0 | 48 | 28 | 9 | 15 |
| Boston | Comm Acad of Sci and Health | 366 | 0 | 28 | 13 | 15 | 44 |
| Brockton | BB Russell | 96 | 0 | 15 | 22 | 37 | 27 |
| Brockton | Champion High | 86 | 0 | 59 | 23 | 11 | 7 |
| Brockton | Edison Academy | 349 | 0 | 10 | 12 | 32 | 46 |
| Brockton | Brockton High | 63 | 0 | 23 | 20 | 21 | 36 |
| Chelsea | Chelsea High | 397 | 0 | 44 | 29 | 15 | 12 |
| Fall River | BMC Durfee High | 789 | 0 | 37 | 27 | 24 | 12 |
| Fall River | Resiliency Preparatory School | 291 | 0 | 14 | 25 | 18 | 43 |
| Holyoke | Holyoke High | 450 | 0 | 42 | 25 | 13 | 20 |
| Holyoke | Wm J Dean Voc Tech | 318 | 0 | 40 | 23 | 18 | 20 |
| Lawrence1 | Business Mgmt and Finance | 1,995 | 28 | 21 | 19 | 17 | 15 |
| HS Learning Center |
| International High |
| Lowell | Lowell High | 75 | 0 | 0 | 4 | 33 | 62 |
| Malden | Malden High | 527 | 0 | 47 | 21 | 17 | 15 |
| North Adams | Drury High | 214 | 15 | 29 | 24 | 16 | 18 |
| Phoenix Charter | Phoenix Charter | 536 | 0 | 50 | 17 | 24 | 9 |
| Pittsfield | Pittsfield High | 232 | 0 | 24 | 33 | 28 | 15 |
| Pittsfield | Taconic High | 230 | 0 | 25 | 26 | 32 | 18 |
| Quabbin | Quabbin Regional | 211 | 0 | 73 | 8 | 11 | 9 |
| Somerville | Somerville High | 290 | 0 | 33 | 26 | 23 | 19 |
| Springfield | HS of Commerce | 732 | 0 | 57 | 1 | 3 | 38 |
| Springfield | HS of Science and Technology | 996 | 2 | 73 | 8 | 4 | 13 |
| Springfield | Putnam Voc Tech | 809 | 0 | 54 | 30 | 5 | 10 |
| Springfield | High School Completion Program | 302 | 0 | 22 | 32 | 24 | 23 |
| Whitman-Hanson | Whitman-Hanson Regional | 212 | 0 | 46 | 24 | 17 | 13 |
| Total and Weighted Average | | 12,454 | 5 | 37 | 19 | 18 | 22 |
| Total and Unweighted Average | | 12,454 | 2 | 36 | 20 | 19 | 24 |
| *Note*: Grade-level information could not be identified for 624 students. These students were included in the “N” column but were not used to calculate the percentages reported in the table. The High School Completion Program was counted as a 29th site for the 2013–14 and 2014–15 school years. (See explanation in report narrative.)  1Lawrence totals are combined across schools. | | | | | | | |

**Program Outcomes**

A complex picture emerged regarding the impact of participating in Implementation programs. Participants were less likely than similar non-participants to drop out during their final year of participation and one year later but no more or less likely than non-participants to drop out two or three years after participating. Specifically, participants were 0.37 times as likely as non-participants to drop out during their final year of participation, and 0.73 times as likely to drop out one year after their final year of participation. Participants also had slightly lower scores on the English language arts, mathematics, and science MCAS exams.

Program impacts that were statistically significant are summarized in the next six tables. Impacts for all models, regardless of statistical significance, are provided in Appendix D. Each table notes three levels of significance, or “p-values.” Lower p-values correspond to a higher degree of confidence that a result represents a true difference between groups rather than random variation in the data.

For graduation and dropout, the tables also provide odds ratios, indicating the degree of impact of the intervention.[[16]](#footnote-16) An odds ratio greater than one indicates that the outcome was more likely for participants than non-participants, while an odds ratio less than one indicates that the outcome was less likely for participants than non-participants. For example, an odds ratio of 1.3 for graduation status means that participants were 1.3 times as likely as non-participants to graduate. An odds ratio of 0.7 for dropout status means that participants were 0.7 times as likely to drop out.

For MCAS scores and attendance, the tables provide the beta (*β*) statistic to indicate the average expected difference in MCAS scores or rate of attendance between treatment and comparison students. For example, a beta of -4.5 for MCAS means that MCAS scores of participants averaged 4.5 points lower than MCAS scores of non-participants. A beta of 1.2 for attendance means that participants averaged 1.2 percentage points greater attendance than non-participants.

The tables also provide a 95 percent confidence interval (CI), recognizing that the sample of students in the study might be somewhat different from the full population from which they were drawn. The confidence interval provides a range that has a 95 percent chance of including the true value of the odds ratio or beta statistic for that population.

**Dropout status.** Students who participated in Implementation programs were 0.37 times as likely (in other words, about one third as likely) as non-participants to drop out during their final year of participation, and 0.73 times as likely to drop out one year after their final year of participation. They were no more or less likely than non-participants to drop out two or three years after their final year of participation.

| Impact of Implementation Programs on Dropout Status | | | |
| --- | --- | --- | --- |
|  | Student Group | Odds Ratio | 95% CI |
| Three Years After Participation | Afr. Amer./Black | 0.58\* | [0.35, 0.96] |
| Two Years After Participation | Afr. Amer./Black | 0.63\* | [0.42, 0.94] |
| Grade 9 | 0.46\* | [0.21, 0.96] |
| One Year After Participation | All | 0.73\* | [0.55, 0.98] |
| Afr. Amer./Black | 0.61\* | [0.41, 0.91] |
| Grade 9 | 0.68\* | [0.51, 0.92] |
| Grade 10 | 0.67\* | [0.47, 0.98] |
| Final Year of Participation | All | 0.37\*\*\* | [0.26, 0.54] |
| Female | 0.36\*\*\* | [0.22, 0.59] |
| Male | 0.39\*\*\* | [0.27, 0.56] |
| Asian | 0.10\* | [0.01, 0.78] |
| Afr. Amer./Black | 0.28\*\*\* | [0.18, 0.45] |
| White | 0.57\* | [0.33, 0.99] |
| Hispanic/Latino | 0.32\*\*\* | [0.21, 0.49] |
| ELL | 0.42\*\* | [0.24, 0.74] |
| SWD | 0.34\*\*\* | [0.18, 0.62] |
| Grade 9 | 0.29\*\*\* | [0.19, 0.45] |
| Grade 10 | 0.40\*\* | [0.22, 0.74] |
| Grade 11 | 0.34\*\* | [0.17, 0.67] |
| Grade 12 | 0.44\*\*\* | [0.30, 0.67] |
| \*p < .05, \*\*p < .01, \*\*\*p < .001.  Note: Only statistically significant results are presented. Analyses were conducted for the following groups: all students, female, male, Asian, African American/Black, Hispanic/Latino, White, free or reduced-price lunch, English language learners, students with disabilities, and grades 9–12. | | | |

Results varied by subgroup. Participants in all subgroups were less likely to drop out during their final year of participation than non-participants.[[17]](#footnote-17) African American/Black students were 0.61 times as likely to drop out one year after their final year of participation, 0.63 times as likely to drop out two years after their final year of participation, and 0.58 times as likely to drop out three years after their final year of participation. Participants whose final year of participation occurred in 9th grade were 0.67 times as likely as non-participants to drop out one year after their final year of participation, and 0.63 times as likely to drop out two years after their final year of participation. Students with disabilities were 0.68 times as likely as non-participants to drop out one year after their final year of participation. All statistically significant findings are summarized in the table above.

**Graduation status.** Students who participated in Implementation programs were generally no more or less likely to have graduated than non-participating students during the final year of participation or one, two, or three years after the final year of participation. Similar results were obtained for all but one subgroup of participants. White participants were 0.42 times as likely to graduate during the final year of participation, and 0.66 times as likely to have graduated three years after intervention. All statistically significant findings are summarized in the table below.

| Impact of Implementation Programs on Graduation Status | | | |
| --- | --- | --- | --- |
|  | Student Group | Odds Ratio | 95% CI |
| Three Years After Participation | White | 0.66\* | [0.45, 0.97] |
| Two Years After Participation | NS | NA | NA |
| One Year After Participation | NS | NA | NA |
| Final Year of Participation | White | 0.42\* | [0.18, 0.96] |
| \**p* < .05.  *Note:* “NS” means “no significant findings.” Only statistically significant results are presented. “NA” means “not applicable.” Analyses were conducted for the following groups: all students, female, male, African American/Black, Hispanic/Latino, White, free or reduced-price lunch, English language learners, students with disabilities, and students in grades 9–12. There were too few Asian students to conduct valid analyses for that subgroup. | | | |

**Attendance.** The rate of attendance for students who participated in Implementation programs was not significantly different during their final year of participation than that of non-participants. The rate of attendance for male and African American/Black participants was higher than that of non-participants (3.6 percentage points and 7.6 percentage points higher, respectively). All statistically significant findings are summarized in the table below.

| Impact of Implementation Programs on Attendance | | | |
| --- | --- | --- | --- |
| Subject | *β* | Effect Size | 95% CI |
| Male | 3.57\*\* | 0.17 | [0.18, 6.96] |
| Afr. Amer./Black | 7.59\*\* | 0.32 | [2.08, 13.10] |
| \*\**p* < .01.  *Note:* Only statistically significant results are presented. Analyses were conducted for the following groups: all students, female, male, African American/Black, Hispanic/Latino, White, free or reduced-price lunch, students with disabilities, and students in grades 9–12. There were too few Asian students to conduct valid analyses for that subgroup. | | | |

**MCAS scores.** Students who participated in Implementation programs in 9th grade scored an average of 1.0 points lower on the 10th-grade English Language Arts MCAS, 1.7 points lower on the Mathematics MCAS, and 2.5 points lower on the Science MCAS than their closely matched peers who did not participate in Implementation programs. To put the size of these differences in context, note that MCAS scores can range from 200 to 280, and most students must earn a score of 240 or higher to satisfy the state’s “competency determination” requirements.

| Impact of Implementation Programs on MCAS Scores | | | |
| --- | --- | --- | --- |
| Subject | *β* | Effect Size | 95% CI |
| English | -1.03\*\* | -0.08 | [-1.77, -0.29] |
| Mathematics | -1.71\*\* | -0.10 | [-2.99, -0.43] |
| Science | -2.49\*\*\* | -0.19 | [-3.71, -1.26] |
| \*\**p* < .01, \*\*\**p* < .001. | | | |

**Strategy-specific dropout rates.** We attempted to assess dropout rates for six of the seven Implementation strategies. We were able to run models for five strategies including Adult Advocates, Alternative Pathways, Credit Recovery, Expanded Time, and School Climate. Sample size limitations (in number of sites or number of students participating by site) prevented us from running similar models for Service-learning and Work-based Learning.

The results, presented in the table below, generally indicated that participants in Alternative Pathways and Expanded Time were less likely to drop out than students who did not participate in those programs, and that participants in Adult Advocate programs were more likely to drop out than students who did not participate in those programs.

More specifically, Alternative Pathways participants were 0.19 times as likely to drop out as non-participants during the final year of intervention, and 0.49 times as likely as non-participants to drop out one year after their final year of participation. Expanded Time participants were 0.22 times as likely to drop out as non-participants one year after the final year of participation, and 0.45 times as likely as non-participants to drop out two years after their final year of participation. Credit Recovery participants were 0.38 times as likely to drop out as non-participating students during the final year of participation.

Adult Advocates participants were 1.6 times as likely as non-participants to drop out one year after their final year of participation, 1.9 times as likely as non-participants to drop out two years after their final year of participation, and 2.1 times as likely as non-participants to drop out three years after their final year of participation. School Climate participants were 3.2 times as likely as non-participants to dropout three years after their final year of participation, but no more or less likely to drop out during their final year of participation, or one or two years after their final year of participation.

| Likelihood of Dropout for Implementation Participants v. Non-Participants by Strategy | | | |
| --- | --- | --- | --- |
|  | Strategy | Odds Ratio | 95% CI |
| Three Years After Participation | Adult Advocates | 2.08\*\*\* | [1.55, 2.77] |
| School Climate | 3.17\*\*\* | [1.90, 5.27] |
| Two Years After Participation | Adult Advocates | 1.92\*\*\* | [1.29, 2.86] |
| Alternative Pathways | 0.35\*\* | [0.16, 0.71] |
| Expanded Time | 0.45\*\* | [0.25, 0.78] |
| One Year After Participation | Adult Advocates | 1.58\*\* | [1.05, 2.38] |
| Alternative Pathways | 0.49\*\* | [0.29, 0.86] |
| Expanded Time | 0.22\*\* | [0.13, 0.37] |
| Final Year of Participation | Alternative Pathways | 0.19\*\* | [0.05, 0.72] |
| Credit Recovery | 0.38\* | [0.15, 0.98] |
| \*p < .05, \*\**p* < .01, \*\*\**p* < .001.  *Note:* Only statistically significant results are presented. | | | |

**Strategy-specific graduation rates.** We attempted to assess graduation rates by strategy for 6 of the 7 Implementation strategies. We were able to run models for three strategies including Adult Advocates, Alternative Pathways, and Credit Recovery. Sample size limitations (in number of sites or number of students participating by site) prevented us from running similar models for Expanded Time, School Climate, and Service-learning and Work-based Learning. Results are presented in the table below. Even after accounting for participation in other Implementation strategies, students who participated in the Adult Advocate programs were 0.61 times as likely as similar non-participants to graduate two years after their final year of participation, and 0.44 times as likely to graduate three years after their final year of participation. There were no significant differences for Credit Recovery or Alternative Pathways students.

| Likelihood of Graduation for Implementation Participants v. Non-Participants by Strategy | | | |
| --- | --- | --- | --- |
|  | Strategy | Odds Ratio | 95% CI |
| Three Years After Participation | Adult Advocates | 0.44\*\*\* | [0.28, 0.68] |
| Two Years After Participation | Adult Advocates | 0.61\*\* | [0.42, 0.88] |
| One Year After Participation | NS | NA | NA |
| Final Year of Participation | NS | NA | NA |
| \*\**p* < .01, \*\*\**p* < .001.  *Note:* “NS” means “no significant findings.” Only statistically significant results are presented. | | | |

**Discussion**

The Implementation programs had a positive effect on participants’ dropout rates during the final year of participation, and one year after the final year of participation, but not two or three years after the final year of participation. Notably, African American/Black participants were less likely to drop out than non-participants during the final year of participation and one, two, and three years after the final year of participation.

With regard to graduation rates, Implementation participants were generally no more or less likely to graduate than non-participating students. The one exception was that White students who participated in Implementation programs were less likely to graduate than non-participants during their final year of participation, and three years after their final year of participation.

Students who participated in Alternative Pathways interventions were less likely to drop out during their final year of participation, as well one and two years after their final year of participation. A possible explanation for this finding is that Alternative Pathways programs at several Implementation sites provided intensive supports to a carefully selected group of students over a long period of time.

Students who participated in Expanded Time interventions were less likely to drop out one and two years after their final year of participation. A possible explanation for this finding is that the Expanded Time programs at many Implementation sites provided students with numerous resources and support structures at their schools that had benefits beyond the year of intervention. These supports included high school transition courses, summer courses, after-school academic support, and enrichment opportunities such as college visits and experiential learning.

For students who participated in Adult Advocates programs, there was no significant difference in dropout or graduation status during the final year of intervention, but in the years after intervention they fell substantially behind non-participants in terms of both dropout and graduation rates. This finding suggests that students who participate in Adult Advocate programs may need ongoing support until graduation. Findings from our site visits and interviews suggest that some Adult Advocate interventions provided a relatively low dosage of treatment, and that some sites stopped providing support from an adult advocate long before graduation. It is possible that the strategy is more effective at a higher dosage.

Students who participated in School Climate interventions were more likely than non-participants to have dropped out three years after their final year of participation. As just discussed for Adult Advocates programs, this finding suggests that students participating in School Climate programs may benefit from continued engagement and support, possibly through graduation.

Students who participated in Implementation programs scored slightly lower on the English language arts, mathematics, and science MCAS exams than similar students who did not participate. A possible explanation for this finding is that Implementation programs at many sites served students with a range of academic and socio-emotional needs that may have impacted performance on the MCAS exams.

As briefly explored in the following paragraphs, there are multiple plausible explanations for this pattern of findings. All of the hypotheses presented below would require confirmation through additional research. For all findings, it is important to keep in mind that this was a quasi-experimental study, not an experimental study. In other words, students were not randomly assigned to MassGrad or non-MassGrad conditions. Despite our rigorous (and generally successful) efforts to balance the MassGrad and non-MassGrad samples on many relevant variables, it is possible that differences between these two groups existed prior to treatment on variables that were not available for inclusion in our analytic models. For example, as discussed in the first section of this report (“MassGrad Program Impacts”), we know that dropout prevention became an increased focus of activity in the state during the MassGrad period, and that both MassGrad and non-MassGrad schools participated in interventions focused on graduation and dropout rates that were not part of the MassGrad initiative.

**Dropout status.** Participating in Implementation programs decreased dropout rates during students’ final year of participation and one year after their final year of participation, but not two or three years after their final year of participation. This shows that the Implementation programs were effective for keeping at-risk students enrolled in school during or shortly after the intervention. However, the Implementation programs taken together were not an effective dropout deterrent two or three years after participation was complete. This pattern of findings is also consistent with the hypothesis that the quality of program implementation improved in the later years of the MassGrad initiative, as the sites gained greater experience with offering Implementation interventions. Only students from the first and second years of MassGrad could be included in analyses looking two and three years out, and those were the years that lacked positive impacts on dropout rates.

**Graduation status.** Participating in Implementation interventions generally had no effect on graduation rates. While the MassGrad initiative was more explicitly focused on preventing dropout than on promoting graduation, many of the Implementation interventions clearly focused on both. However, dropout is a more time-sensitive indicator, because it can happen in any year of high school. In contrast, graduation can only happen for seniors, so a longer analysis period might reveal differences in graduation trends that were not detectable with the data available for this study.

**Attendance rates.** Participating in Implementation interventions generally had no effect on rates of attendance during students’ final year of participation. However, male students and African American/Black students attended significantly more school during their final year of participation. While it is possible that attendance was a greater emphasis of Implementation interventions for male and African American/Black students than for other groups, program personnel did not mention that emphasis in our interviews.

**MCAS scores.** Ninth-grade Implementation participants scored lower than non-participants on the English, mathematics, and science MCAS exams. One possible explanation of these findings would be that the content presented in traditional English, mathematics, and science classrooms, as well as supplemental MCAS test preparation activities, are better aligned with the MCAS exam than those presented in the Implementation interventions.

Several additional considerations may help to explain the complex pattern of findings just presented. The Implementation interventions varied across sites and across strategies in ways that could not be accounted for with validity using available data. For example, the dosage (i.e., intensity and duration) of intervention varied widely both within and between sites, and within and between strategies. Some sites provided intensive support to students over an extended period of time, while others provided a relatively low dosage of intervention to students. It is also likely that participants and non-participants were dissimilar in ways that were not accounted for by our available data and therefore could not be included in our weighting procedures. For example, sites may have utilized formal and informal selection criteria (e.g., aspects of socio-emotional needs, level of credit accumulation) to assign students to participation. These selection criteria could have led to systematic differences between participating and non-participating groups that could have had a meaningful impact on the findings.

Despite these limitations, it is notable that significant findings were detected, particularly a strong, positive finding related to the primary purpose of the MassGrad initiative: students who participated in Implementation Award programs were less likely to drop out during their final year of participation and one year later than similar non-participants. We believe that these findings—as well as the extensive qualitative findings presented in the summary briefs and annual reports—are useful for gauging impacts, identifying promising practices, and informing policy conversations regarding dropout prevention and high school completion strategies.

# Gateway to College

The Gateway to College (GtC) program is intended to engage youth who have dropped out of high school or who are not on track to graduate, enabling them to complete their high school diploma requirements at institutions of higher education while simultaneously earning college credits toward an associate’s degree or certificate. The program is intended to support the academic, social, and emotional needs of participating students.

Bristol Community College (BCC), Quinsigamond Community College (QCC), and Springfield Technical Community College (STCC) partnered with Massachusetts school districts to implement GtC programs with the support of MassGrad funding. The Gateway to College National Network (GtCNN) provided training and technical assistance. BCC and QCC received their MassGrad awards in October 2011, and STCC received the final MassGrad award in the spring of 2012. Each partnership received three years of MassGrad funding and planned their program for one or two semesters before enrolling students. BCC first enrolled students in January 2012, QCC in September 2012, and STCC in September 2013.

UMDI’s data collection activities included more than 40 interviews with ESE program managers; program administrators, faculty, and resource specialists; personnel from partnering school districts; and technical assistance providers from GtCNN. We also conducted site visits, observed statewide technical assistance meetings, and reviewed program documentation and student data.

**Findings**

Extensive qualitative information about the GtC programs is presented in the Gateway to College Summary Brief (Appendix F) and the three MassGrad evaluation annual reports. Quantitative findings are provided below regarding the implementation and outcomes of the GtC programs.

A total of 273 students were enrolled across the three sites from school years 2011–12 to 2013–2014. Students at STCC were also enrolled and funded by MassGrad in the 2014–15 school year, but data for these students were not made available to UMDI. Of the 273 students for whom data were available, 261 (96 percent) could be successfully matched to ESE’s state-assigned student identifiers, which provided additional demographic and background data, as well as high school dropout and graduation status. The results in this section reflect these 261 students.[[18]](#footnote-18)

**Student demographics and baseline data.** Using the GtCNN and ESE’s Student Information Management System (SIMS) databases, demographic information was compiled for BCC, QCC, and STCC students. GtCNN data was available from school years 2011–12 to 2013–2014. Although STCC continued to receive MassGrad funding during the 2014–15 school year, GtCNN data for these students was not available for the evaluation.

***Demographics****.* Across the three sites, 61 percent of enrolled students were eligible for free or reduced-price lunch, 7 percent were students with disabilities, and 2 percent were English language learners. In addition, 56 percent of the students were female, 54 percent were White, 26 percent were Hispanic/Latino, 16 percent were African American/Black, 3 percent were Asian, and 1 percent each were Multi-Race Non-Hispanic or Latino, American Indian or Alaskan Native, or Native Hawaiian or Pacific Islander. The gender balance was about equal at BCC (55 percent female) and QCC (51 percent female), with a higher percentage of females (65 percent) at STCC.

The table below summarizes the racial/ethnic composition of participants in each site. The majority of students at BCC and QCC were White, and approximately 29 percent of QCC students were Hispanic/Latino. Most students at STCC were Hispanic/Latino (59 percent) or African American/Black (26 percent).

|  |  |  |  |
| --- | --- | --- | --- |
| **Gateway to College Race/Ethnicity, by Site** | | | |
| Race/Ethnicity (%) | Bristol  (N=122) % | Quinsigamond  (N=88) % | Springfield Technical  (N=51) % |
| White | 71 | 53 | 16 |
| African American/Black | 13 | 13 | 26 |
| Asian | 5 | 3 | 0 |
| Amer. Indian/Alaskan Native | 2 | 0 | 0 |
| Native Hawaiian/Pacific Islander | 1 | 0 | 0 |
| Multi-race, Non-Hisp./Lat. | 0 | 2 | 0 |
| Hispanic/Latino | 8 | 28 | 59 |

The table below summarizes the distribution of participants’ ages by site, which ranged from 16 to 20 years old, with a mean of 17 years. The largest percentage of students in each program was 17 years old.

|  |  |  |  |
| --- | --- | --- | --- |
| **Gateway to College Age at Entry, by Site** | | | |
| Age | Bristol  (N=122) % | Quinsigamond  (N=88) % | Springfield Technical  (N=51) % |
| 16 | 30 | 19 | 18 |
| 17 | 33 | 38 | 49 |
| 18 | 30 | 33 | 20 |
| 19 | 7 | 6 | 14 |
| 20 | 1 | 6 | 0 |

***Students with disabilities and English language learners****.* Programs served small percentages of students with disabilities, with 7 percent at BCC, 8 percent at QCC and 6 percent at STCC. English language learners (ELL) comprised 0 percent at BCC, 5 percent at QCC, and 4 percent at STCC.

***High school status.*** Students who had been out of school (i.e., absent or dropped out) for at least 60 days prior to participation in GtC activities were 32 percent of BCC students, 8 percent of QCC students, and no STCC students.

***Baseline credit accumulation****.* The table below compares the average number of high school credits students had accumulated when they began the GtC program to the number of credits required to graduate from their high schools. Students served by the BCC program attended high schools in the Fall River school district, which requires 20 credits for graduation. The QCC program served students from the Worcester and Quabbin Regional school districts, which require 24 and 125 credits to graduate respectively. STCC served students in the Springfield public school district, which requires 20.5 credits to graduate. Across sites and sending districts, students entered the program with from 44 to 55 percent of the credits required for graduation from their sending high schools.

|  |  |  |  |
| --- | --- | --- | --- |
| **Credit Accumulation of Incoming GtC Students, by Site** | | | |
|  | Bristol  (Fall River) | Quinsigamond  (Worcester/Quabbin) | Springfield Technical  (Springfield) |
| Mean Number of Credits Accumulated Upon Program Entry | 11 | 13 / 55 | 10 |
| Credits Required to Graduate from Sending High School | 20 | 24 / 125 | 20.5 |
| Percent of Required Credits Accumulated Upon Program Entry | 55 | 54 / 44 | 49 |

**Program Outcomes and Impacts**

***Enrollment and persistence****.* As of spring 2014, 17 percent of students had graduated from the GtC program and 34 percent remained enrolled in the program. A national average across GtC sites is not available, but GtCNN staff believed that this rate was similar to most programs in the early stages of implementation, such as the MassGrad sites. By June 2015, 49 percent of these students had graduated from high school and 26 percent had dropped out of high school. Sites did not track their students’ post-GtC outcomes.

The table below summarizes enrollment and graduation status for BCC, QCC, and STCC from school years 2011–12 to 2013–14. BCC, QCC, and STCC reflect five, four, and two cohorts of students respectively. The differing graduation rates across sites reflect in part the length of time that the programs had been in operation.

|  |  |  |  |
| --- | --- | --- | --- |
| **Gateway to College Enrollment and Persistence, SY12 to SY14** | | | |
|  | Bristol  N (%) | Quinsigamond  N (%) | Springfield Technical  N (%) |
| Graduated | 28 (23%) | 12 (14%) | 4 (8%) |
| Actively Enrolled | 39 (32%) | 26 (29%) | 23 (45%) |
| Disenrolled | 55 (45%) | 50 (57%) | 24 (47%) |
| Total Enrollment | 122 | 88 | 51 |

***Recovered dropouts.*** Fifteen students who participated in GtC had been reported by the state as dropouts in the years prior to their GtC participation. Of these 15 students, 9 (60 percent) graduated from high school, and 3 remained enrolled in high school as of June 2015. An additional 16 students were identified by sites (through supplemental data submissions) as having been absent or dropped out of school for 60 or more days prior to participation in GtC activities. They had not been classified as dropouts by the state, likely because their extended absences and subsequent enrollment in GtC had fallen in between the dates of the state’s annual dropout calculations. Of these students, 7 (44 percent) graduated from high school, and 4 remained enrolled in high school as of June 2015. The graduation of 16 former dropouts is one sign of GtC’s effectiveness as a strategy for dropout prevention and re-engagement.

***Attendance.*** Attendance rates for students during their most recent term in the BCC program averaged 85 percent, while attendance at QCC and STCC was 84 percent and 90 percent respectively. Students who had graduated from the GtC program or remained actively enrolled had a higher average attendance rate than students who had disenrolled from the program. The sites indicated that 23 percent of students (N=32) who disenrolled had done so due to attendance issues; this is reflected in the substantially lower minimum attendance rates among disenrolled students.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Gateway to College Attendance Rate by Enrollment Status** | | | | | | | | | |
|  | Bristol  (%) | | | Quinsigamond  (%) | | | Springfield Technical  (%) | | |
|  | Mean | Min | Max | Mean | Min | Max | Mean | Min | Max |
| Graduated | 93 | 79 | 100 | 90 | 74 | 98 | 98 | 96 | 99 |
| Actively Enrolled | 83 | 54 | 100 | 87 | 72 | 98 | 93 | 70 | 100 |
| Disenrolled | 82 | 47 | 100 | 80 | 33 | 98 | 85 | 30 | 100 |
| Combined | 85 | 47 | 100 | 84 | 33 | 98 | 90 | 30 | 100 |

***Credits attempted and earned.*** The table below presents the mean and range of high school and college credits attempted and earned cumulatively for all students who enrolled in GtC programs. Depending on the site, enrolled students had earned an average of 10 to 12 college credits. In interpreting the table, note that students typically earned one credit for every high school course but three credits for every college course. High school credits were standardized in the table to account for differences in how school districts awarded credits.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Cumulative High School and College Credits Attempted and Earned**  **by All Enrolled Gateway to College Students, SY12 to SY14** | | | | |
|  | | Bristol  (N=122) | Quinsigamond  (N=88) | Springfield Technical  (N=51) |
| High School Credits Attempted | Mean | 7 | 5 | 9 |
| Min | 3 | 1 | 5 |
| Max | 17 | 15 | 12 |
| High School Credits Earned | Mean | 5 | 3 | 6 |
| Min | 0 | 0 | 0 |
| Max | 16 | 13 | 11 |
| College Credits Attempted | Mean | 19 | 15 | 21 |
| Min | 10 | 3 | 12 |
| Max | 45 | 39 | 30 |
| College Credits Earned | Mean | 12 | 10 | 12 |
| Min | 0 | 0 | 0 |
| Max | 44 | 30 | 26 |

The table below presents the cumulative credits attempted and earned by GtC graduates from school years 2011–12 to 2013–14. Depending on the site, students who graduated from the program had earned an average of 20 to 26 college credits. Forty-four students were reported as graduating from high school as a result of GtC. It is important to note that data reflects varying numbers of enrolled cohorts. At the time of final data collection, BCC, QCC, and STCC had enrolled five, four, and two cohorts respectively.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Cumulative High School and College Credits Attempted and Earned**  **by Gateway to College Graduates Only, SY12 to SY14** | | | | |
|  | | Bristol  (N=28) | Quinsigamond  (N=12) | Springfield Technical  (N=4) |
| High School Credits Attempted | Mean | 9 | 7 | 10 |
| Min | 4 | 1 | 10 |
| Max | 17 | 13 | 11 |
| High School Credits Earned | Mean | 8 | 5 | 9 |
| Min | 4 | 1 | 8 |
| Max | 16 | 13 | 11 |
| College Credits Attempted | Mean | 25 | 20 | 26 |
| Min | 10 | 9 | 24 |
| Max | 45 | 30 | 27 |
| College Credits Earned | Mean | 22 | 15 | 21 |
| Min | 10 | 6 | 16 |
| Max | 44 | 30 | 25 |

***College grade point average****.* The table below presents average cumulative college GPA by site. The average cumulative college GPA of all students who had enrolled in the GtC program was 2.1. Students who had graduated from the GtC program (N=44) had an average cumulative GPA of 2.4.

|  |  |  |  |
| --- | --- | --- | --- |
| **Gateway to College, Average Cumulative College GPA by Site** | | | |
|  | Bristol | Quinsigamond | Springfield Technical |
| GPA for All Students | 2.2 | 1.9 | 2.2 |
| GPA for GtC Graduates Only | 2.5 | 2.2 | 2.9 |

***Causal analyses.*** Options for utilizing rigorous causal designs to assess the impacts of GtC participation were limited. Larger sample sizes would have enabled a quasi-experimental, matched-comparison group design, but the final sample size did not permit us to account for differences in treatment and possible comparison groups adequately through weighting or matching procedures. Additionally, GtC students were selected based on being at high risk for dropout, making it difficult to identify a comparable comparison group with available data. For example, we know that the dropout rate for GtC participants was higher than the dropout rate for their sending districts, but we could not reasonably conclude from that information that GtC was ineffective as a dropout prevention and re-engagement strategy. Moreover, some of the other findings presented above indicate that many GtC participants graduated or took demonstrable steps toward graduation.

**Factors associated with high school dropout of GtC students.** Four factors were assessed to determine their relationship with GtC students dropping out of high school. The four factors, which were all assessed at the time the student entered the GtC program, were grade point average, the number of credits a student still needed to graduate from high school, and having an ACCUPLACER exam score above site cutoffs for placing out of developmental reading or math.

The relationships were assessed using four logistic regression models. Before assessing each of the four factors, the analysis controlled for the influence of gender, race, age, and free or reduced-price lunch status. The dichotomous dependent variable was whether students had dropped out of high school versus graduating from high school or remaining enrolled in the GtC program or high school.

As shown in the next table, both GPA and high school credit accumulation were significantly associated with the likelihood of dropping out. Students who needed more credits to graduate were more likely to drop out, and students who had higher GPAs were less likely to drop out. Specifically, students were 1.13 times as likely to drop out for every additional credit needed to graduate, and students were only half as likely to drop out for every one-point increase in their GPA (e.g., from 2.0 to 3.0).

| **Factors Associated with Dropout Status of GtC Participants** | | | |
| --- | --- | --- | --- |
| Models | Odds Ratio | 95% CI | N |
| GPA at time of entry | 0.50\*\*\* | [0.35, 0.74] | 212 |
| High school credits needed to graduate | 1.13\*\*\* | [1.05, 1.21] | 232 |
| ACCUPLACER Math | 0.54 | [0.26, 1.12] | 194 |
| ACCUPLACER Reading | 0.71 | [0.39, 1.28] | 252 |
| \*\*\**p* < .001 | | | |

Scores on the ACCUPLACER mathematics and reading tests were not significantly associated with the likelihood of dropping out. To explore these relationships further, two additional logistic regressions were conducted based on students’ actual ACCUPLACER score (rather than simply whether they were above or below the cutoff score used by program sites). For these analyses, scores on the ACCUPLACER reading test were, again, not significantly associated with the likelihood of dropping out. Scores on the ACCUPLACER mathematics exam, while not statistically significant (p < .07), showed the meaningful trend that each additional point on the exam was associated with a one percentage point reduction in the expected dropout rate. This finding suggests that higher mathematics scores may be a key predictor of success in the GtC programs.

Finally, the comparison variables of gender, race, age, and free or reduced-price lunch status were not statistically significant in any model. The relatively small sample size may have limited the power to detect significant differences for these comparison variables, as well as for the ACCUPLACER analyses.

# MassGrad Coalitions

MassGrad provided funding and technical assistance to four community and regional coalitions. The mission of the coalitions was to identify a challenge in their community related to dropout prevention that they believed could be addressed most effectively through a collaborative approach across schools, districts, community-based organizations, businesses, and government agencies. The coalitions were located in Franklin County, Malden, New Bedford, and Worcester. They received MassGrad support for the 2012–13, 2013–14, and 2014–15 school years. The School & Main Institute (SMI) provided technical assistance to help the coalitions refine goals, develop and implement strategies, measure outcomes, and plan for sustainability beyond the funding period.

UMDI’s data collection activities included annual interviews of ESE program managers, coalition managers, coalition members, and SMI; surveys of coalition members; and observations of coalition meetings and technical assistance events. Additional data sources included awardee proposals, reports from the coalitions to ESE, and attendance data from coalition meetings.

**Coalition Overviews**

Brief overviews of each of the four coalitions are provided below. More extensive descriptions of each coalition are available in the MassGrad annual reports and in four case studies developed by the School & Main Institute.[[19]](#footnote-19)

**The Franklin County Coalition.** The coalition’s goal was to reduce dropout rates related to student mobility. They created a quarterly “Resource Roundtable” in each participating district, led by school personnel and joined by representatives from local CBOs. The roundtables used a collaborative case consultancy model in which a real or fictional student profile was discussed to identify possible reasons that the student was not succeeding in high school and what supports could be implemented. The coalition also created a leadership team that included school, district, and community members from each of the district roundtables. The team met quarterly to share information from the roundtables’ work and to discuss available services, how to access them, and best practices for addressing youth issues. A regional facilitator attended all of the district roundtables to identify common needs and best practices that could be shared at the leadership team meetings.

**The Malden Coalition.** The coalition’s two main initiatives focused on providing adult advocates to at-risk students and addressing mental health issues that contribute to students dropping out. To provide adult advocates, the coalition created the “Graduation Guru” program, which recruited and trained adults from the community to support student progress toward graduation. After the 2012–13 school year, the coalition worked with Malden High School to shift oversight of the Graduation Guru program to school staff who were already implementing a smaller adult advocates program at the school. With regard to student mental health, the coalition developed a free smartphone app that provides information for youth and their families about community resources such as education, parenting, employment, food assistance, and housing. In addition, the coalition developed and implemented a professional development day focused on student mental health issues that was attended by school and community personnel.

**The New Bedford Coalition.** The coalition developed and launched the College and Career Readiness Family Engagement Center at New Bedford high school. The center aims to create a culturally responsive and multilingual environment for at-risk English language learners (ELLs) and their families to engage in college and career readiness discussion and preparation. Resources provided for families included adult education classes, translation services, and immigration and deportation supports.

The center also worked with multiple community partners: First, a coalition member from Educational Talent Search helped students complete college and financial aid applications. Second, the non-profit organization GEAR UP worked with the center to host visits to local colleges. Third, the coalition partnered with Bridgewater State University (BSU) to create a transition program for 9th graders identified as at-risk for dropping out. Participating students visited BSU once per month to receive academic support and participate in activities, such as observing a college class or attending a sporting event, that supported the students’ ability to envision themselves as college students in the future.

**The Worcester Coalition.** The coalition focused on reducing the dropout rate of Hispanic/Latino and ELL students. During the 2012–13 school year, they implemented a student case management system for 15 to 20 students at North High School. The coalition’s working group of teachers and school district personnel met biweekly to discuss the students’ progress and ongoing needs, as well as to make recommendations and referrals for services. The following year the coalition expanded its membership to include representatives from local CBOs that work with at-risk youth. The coalition also shifted its focus from student case management to the collaborative case consultancy approach described above for the Franklin County Coalition. This approach enabled members to discuss how their organizations could work together to support students. The coalition also advanced restorative justice practices at the school through trainings for students, school personnel, and coalition members. Finally, the coalition developed enrichment activities during and after school hours including conflict resolution groups, theater, mentoring, and yoga.

**Findings**

Extensive information about the coalitions is presented in the MassGrad Coalitions Summary Brief (Appendix G) and the three MassGrad evaluation annual reports regarding coalition participation, communication, climate, leadership, and perceptions of coalition success.

Attendance at coalition meetings varied across sites and year, as shown in the table below. The number of meetings per year ranged from 5 to 18, and the average number of attendees per meeting ranged from 6 to 25 people, with a range of 2 to 44 attendees.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **MassGrad Coalition Meeting Attendance, by Site and Year** | | | | | |
| Coalition | Year | Number of Meetings | Average  Attendance | Minimum  Attendance | Maximum Attendance |
| Franklin | SY13 | 11 | 10 | 7 | 18 |
| SY14 | 11 | 15 | 6 | 25 |
| SY15 | 6 | 12 | 6 | 19 |
| Malden | SY13 | 11 | 26 | 18 | 29 |
| SY14 | 12 | 18 | 7 | 28 |
| SY15 | 18 | 25 | 9 | 44 |
| New Bedford | SY13 | 6 | 15 | 7 | 21 |
| SY14 | 8 | 9 | 4 | 14 |
| SY15 | 5 | 9 | 4 | 14 |
| Worcester | SY13 | 10 | 6 | 3 | 8 |
| SY14 | 14 | 11 | 2 | 23 |
| SY15 | 15 | 7 | 5 | 10 |

In annual surveys of coalition members, almost all respondents reported understanding the goals and objectives of their coalition, understanding the role of the manager and members, and feeling well informed about coalition activities. They also indicated that the coalitions established positive and collaborative working environments in which respondents felt genuinely involved.

Almost all respondents agreed that the coalition had a positive impact on their organizations. In addition, most reported that they were in contact with coalition members outside of meetings to discuss activities not related to the coalition, suggesting that the coalition’s impact was leveraged beyond its specific activities.

The summary brief presents a table listing the priority areas, impact measures, and tracking plans for each of the four coalitions. Collecting data related to these areas was an ongoing challenge for the coalitions, and the coalitions were not required to present final data regarding their progress in these areas. When discussing outcomes and impact, ESE noted that direct student impact within the context of the coalitions had not been defined and was not their intended goal for the coalitions. Specifically, one ESE representative said, “We were never looking for a specific impact, a number .... We just wanted them serving the highest risk students.”

Additional information about the success of the coalitions is available from responses to the member surveys. The majority of respondents reported that the coalitions had been successful or very successful in “reducing the dropout rate among these ‘at-risk’ youth” (61 percent), an additional 9 percent reported that the coalitions had been somewhat successful in this regard, and 21 percent reported that they did not know whether the coalitions had been successful. Respondents perceived that the coalitions had been most successful in defining their goals (85 percent) and carrying out key coalition activities (74 percent). About half of the respondents saw their coalitions as successful or very successful in “providing services to ‘at-risk’ youth” and “changing the way I and/or my organization accesses or utilizes resources or services related to dropout prevention and recovery.” Coalitions were perceived to be less successful with “generating awareness of the coalition in the larger community” (44 percent).

In the final year’s member survey, 71 percent of respondents believed that their coalition would continue beyond the MassGrad funding period, and an additional 18 percent believed that it might continue. In addition, 78 percent of respondents reported that they would continue to participate in their coalition, and an additional 18 percent reported that they might continue. Only two percent reported that they would not continue to participate.

The evaluation findings suggest that coalition members viewed the coalitions and managers as having succeeded in setting up an effective and collaborative working environment in which roles, goals, and activities were understood and carried out. Coalition members reported that they had worked hard to carry out coalition activities and received many benefits from their participation. In addition, the majority of members believed that the coalitions had been successful at defining goals, completing activities, and improving dropout rates.

As noted earlier, extensive additional information is presented in the MassGrad Coalitions Summary Brief (Appendix G), the three MassGrad annual evaluation reports (which are referenced in the introduction of this report), and in case studies of each coalition that were developed by the School & Main Institute. This information includes overviews of each of the coalitions’ activities; promising practices, successes, and challenges for each of the coalitions; and descriptions of the technical assistance provided to the coalitions.

# Dropout Prevention and Re-engagement Work Group

The Dropout Prevention and Re-engagement Work Group is a partnership between ESE and the 120 schools from 76 districts in the current MassGrad school cohort. It is intended to provide opportunities for networking, sharing promising approaches, and creating an infrastructure of collaboration around all topics concerning dropout reduction. The Work Group existed for two years prior to the MassGrad award but was expanded as part of MassGrad to include more districts and activities.

Participating schools and districts were expected to create a team of staff that would engage in Work Group activities and be primarily responsible for ongoing local needs assessments, analysis of early indicator data, collaboration with other MassGrad school teams, and implementation of expanded programs and services. The teams were expected to include not only staff of target schools but also representatives from the school district and feeder middle schools.

The Work Group was originally intended to include only state-wide gatherings, but ESE added regional gatherings and webinars based on feedback from districts. These additions were a joint effort across several ESE college and career readiness initiatives, so they included but were not limited to MassGrad districts.

UMDI’s data collection activities included interviews with ESE program managers, an annual survey of Work Group members and participants, and observation of Work Group events—including 8 state-wide Work Group gatherings, 2 regional gatherings, and 23 webinars. Additional data sources included registration and attendance data from Work Group gatherings and webinars.

**Findings**

ESE held eight state-wide Work Group gatherings from school years 2010–11 to 2014–15. Work Group meeting attendance declined from school years 2010–11 to 2012–13 but then increased in 2013–14 and 2014–15. Registration for Work Group meetings ranged from 86 to 200 registrants, with an average registration of 134 individuals from 29 districts.

ESE also held 10 regional gatherings in school years 2013–14 and 2014–15 that were open to both MassGrad and non-MassGrad participants. An average of 30 participants from 5 MassGrad districts registered for each of the regional gatherings. Registration ranged from 6 to 47 participants from MassGrad districts.

ESE provided 23 webinars to Work Group members, with an average attendance of 24 registrants drawn from 16 districts. Attendance at webinars ranged from 7 to 44 registrants. The number of participants exceeded the number of registrants, because multiple individuals could “attend” a webinar by viewing a single screen together.

Last, ESE hosted a celebratory, culminating “MassGrad Showcase” event in May 2015, with 206 registrants from 41 MassGrad districts. This event is described in greater detail below. Across all Work Group events that occurred from school years 2010–11 to 2014–15, including meetings, webinars, and regional gatherings, personnel from an average of 25 percent of MassGrad districts registered to participate in each event.

Extensive information about the Work Group is presented in the three MassGrad evaluation annual reports. Additional findings are presented below, some of which are from the Work Group activities in the final year of MassGrad that were not presented in previous annual reports.

**Registration and Attendance**

The table below presents a summary of registration and attendance data for the seven Work Group meetings that took place between May 2011 and October 2015. The percentage of MassGrad districts (N=76) registering for the meetings varied over time, with as many as 50 percent registering for the May 2011 meeting and as few as 30 percent registering for the March 2013 meeting. The percentage of eligible districts that registered declined over time through March 2013, but then increased for the final three gatherings through October 2015. Many participating districts adhered to the Work Group’s intention that districts send teams rather than individual representatives, with the average number of registrants per district ranging from three to six, and the average number of attendees per registered district ranging from three to four.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Work Group Meeting Registration and Attendance** | | | | | | |
| Event | Number of  Registrants | Number of Attendees | Number  of Districts Registered | Average  Number of  Registrants  per District | Average Number of  Attendees per  District | Percentage of Eligible Districts Registered |
| May 2011 | 162 | No Data | 38 | 4 | No Data | 50 |
| October 2011 | 86 | No Data | 22 | 4 | No Data | 29 |
| April 2012 | 140 | 112 | 33 | 4 | 3.9 | 43 |
| October 2012 | 71 | 68 | 25 | 3 | 2.7 | 33 |
| March 2013 | 116 | 87 | 23 | 5 | 3.8 | 30 |
| October 2013 | 131 | No Data | 26 | 5 | No Data | 35 |
| April 2014 | 200 | No Data | 33 | 6 | No Data | 44 |
| October 2014 | 162 | No Data | 32 | 5 | No Data | 42 |

The table below summarizes registration for the webinars for which data are available. It is possible that the number of actual attendees exceeded the number of registrants, because multiple individuals could “attend” a webinar by viewing a single screen together. Only registrants from MassGrad districts are included. The number of non-MassGrad registrants was 12 in September 2014, 27 in October 2014, 54 in December 2014, 17 in February 2015, 28 in March 2015, 23 in April 2015, 15 in May 2015, and 15 in June 2015. The percentage of MassGrad districts that registered to participate in Work Group webinars ranged from 8 to 36 percent.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Work Group Webinar Registration** | | | | |
| Date | Number of MassGrad Registrants | Number  of Districts Registered | Average Number  of Registrants  per District | Percentage of Eligible Districts Registered |
| November 2011 | 27 | 14 | 12 | 18 |
| January 2012 | 7 | 6 | 1 | 8 |
| June 2012 | 16 | 13 | 1 | 17 |
| December 2012 | 44 | 27 | 2 | 36 |
| February 2013 | 30 | 21 | 1 | 28 |
| May 2013 | 27 | 18 | 2 | 24 |
| September 2013 | 31 | 16 | 2 | 21 |
| October 2013 | 44 | 27 | 2 | 36 |
| November 2013 | 22 | 20 | 1 | 27 |
| December 2013 | 23 | 14 | 2 | 19 |
| January 2014 | 26 | 17 | 2 | 23 |
| February 2014 | 34 | 20 | 2 | 27 |
| April 2014 | 10 | 7 | 1 | 9 |
| May 2014 | 14 | 11 | 1 | 15 |
| June 2014 | 14 | 12 | 1 | 16 |
| September 2014 | 31 | 16 | 2 | 21 |
| October 2014 | 23 | 13 | 2 | 17 |
| December 2014 | 27 | 18 | 2 | 24 |
| February 2015 | 43 | 27 | 2 | 36 |
| March 2015 | 18 | 10 | 2 | 8 |
| April 2015 | 13 | 10 | 1 | 8 |
| May 2015 | 22 | 15 | 1 | 20 |
| June 2015 | 14 | 11 | 1 | 15 |

The table below presents a summary of registration data for the four regional gatherings that took place between November 2014 and January 2015. Twenty-six percent of MassGrad districts (N=20) registered for the networking sessions. The average number of registrants per MassGrad district ranged from 5.1 to 6.7. During the 2014–15 school year, ESE opened registration for the regional gatherings to non-MassGrad districts. The number of non-MassGrad registrants per session were 20 for Southeast, 16 for Central, 34 for Northeast, and 28 for Western.

|  |  |  |  |
| --- | --- | --- | --- |
| **Registration for College and Career Readiness Regional Gatherings** | | | |
| Event | Number of  Registrants from MassGrad Districts | Number of MassGrad Districts Registered | Average Number of  Registrants per MassGrad District |
| Southeast (Nov 2014 – Taunton) | 46 | 9 | 5.1 |
| Central (Dec 2014 – Devens) | 6 | 1 | 6.0 |
| Northeast (Jan 2015 – Westford) | 17 | 3 | 5.6 |
| Western (Jan 2015 – Holyoke) | 47 | 7 | 6.7 |
| **Total** | 124 | 20 | 6.2 |

**MassGrad Showcase**

The MassGrad Showcase highlighted strategies from districts around the state to reduce dropout rates and increase graduation rates. A total of 206 individuals registered from 41 MassGrad districts. About 54 percent of eligible MassGrad districts registered, with an average of 5 people registering per district.

The showcase, held in Leominster, Massachusetts, was described by ESE as a celebration of the hard work and successes of MassGrad schools and districts. The showcase started with student speakers sharing successes they had experienced as a result of MassGrad programs. This was followed by an address by Dr. Mitchell Chester, the Massachusetts Commissioner of Elementary and Secondary Education. Next a leadership panel featuring Dr. Melinda Boone of Worcester, Principal Dana Brown of Malden, Dr. Russell Johnston of ESE, and Principal Amy Meehan of North Adams offered advice to districts that were implementing strategies to reduce dropout rates and increase graduation rates.

Two breakout sessions were held next. During the first session, participants could select among topics including adult advocates, socio-emotional supports, dropout re-engagement, community partnerships, alternative pathways, supporting 9th graders, summer programs, and middle school supports. During the second session, topics included credit recovery, adult advocates, school culture, alternative pathways, engaging curriculum and instruction, and proactive use of data (with a focus on ESE’s Early Warning Indicator System). Each session was led by two districts identified as exemplary in their implementation of the specific strategy.

Throughout the day, districts also had the opportunity to participate in a gallery walk featuring posters from each of the MassGrad districts, as well as the four MassGrad coalitions and three Gateway to College sites. Participants were encouraged to leave congratulatory comments, compliments, pictures, or notes on the “graffiti wall” under the posters. Districts could also put on costumes and take photos in the MassGrad photo booth, share a MassGrad accomplishment, give a compliment to someone from their district at the “Shout-out Board,” and create a video of “MassGrad Memories” at the “Story Station.” The day ended with remarks from ESE.

**Work Group Survey**

The 2015 Work Group survey was sent to 845 recipients from the following groups: Work Group members and non-members who had attended Work Group meetings, webinars, or regional gatherings; individuals from school districts or community-based organizations who had requested to be on the MassGrad mailing list; and presenters at Work Group events. Of the 845 survey recipients, 107 email addresses were non-deliverable, so the survey reached 738 participants and had a response rate of 16 percent (N=132). The low response rate suggests that the findings should be interpreted with caution, as they might not be fully representative of the Work Group community as a whole.

Responses were received from 46 school districts, 1 community college, and 2 community-based organizations. Respondents’ roles include guidance counselor (13 percent), teacher (13 percent), principal (5 percent), assistant principal (6 percent), dropout prevention coordinator (7 percent), curriculum coordinator (2 percent), and other (53 percent). Most respondents who selected “other” roles specified that they were school and district administrators, school program managers or coordinators, or specialists.

**Attendance.** Fifty-four percent of respondents (N=71) reported that they had attended one or more Work Group meetings, webinars, or regional gatherings. Fifty-seven percent of respondents (N=77) reported that they had attended the MassGrad Showcase. The table below shows which events survey respondents attended.[[20]](#footnote-20)

|  |  |  |
| --- | --- | --- |
| **Work Group Events Attended** | | |
| Event | N | % of Respondents |
| Webinar #1 (Sep 9, 2014) – Data Wise: Sources of College and Career Readiness Data | 8 | 14 |
| Work Group Meeting (Oct 7, 2014, Leominster) – Making 9th Grade a Springboard for High School Success | 36 | 62 |
| Webinar #2 (Oct 14, 2014) – Building a Positive School Context in the Context of the New Discipline Law | 9 | 16 |
| Regional Gathering – Southeast (Nov 20, 2014) | 7 | 12 |
| Regional Gathering – Central (Dec 2, 2014) | 1 | 2 |
| Webinar #3 (Dec 9, 2014) – Integration of College and Career Readiness: the Personal/Social Domain | 8 | 14 |
| Regional Gathering – Northeast (Jan 15, 2015) | 8 | 14 |
| Regional Gathering – Western (Jan 22, 2015) | 7 | 12 |
| Webinar #4 (Mar 3, 2015) – Graduation and Dropout Data | 17 | 29 |
| Webinar #5 (Mar 10, 2015) – Career Development Education: Career Awareness, Exploration, and Immersion | 7 | 12 |
| Webinar #6 (Apr 14, 2015) – Transition to 9th Grade | 8 | 14 |
| Webinar #7 (May 12, 2015) – Individual Learning Plans | 4 | 7 |

**MassGrad Showcase.** Participants were asked about the benefits provided by the MassGrad showcase. Almost all participants strongly agreed or agreed that the showcase was successful and provided opportunities to grow and learn from other districts.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Benefits of Participation in Work Group Events** | | | | | | |
| The MassGrad showcase… | N | Strongly Agree  (%) | Agree  (%) | Neutral  (%) | Disagree  (%) | Strongly Disagree  (%) |
| Provided useful opportunities for districts to learn from each other. | 77 | 56 | 42 | 3 | 0 | 0 |
| Provided useful opportunities for networking. | 76 | 46 | 45 | 9 | 0 | 0 |
| Provided useful resources for carrying out dropout prevention and re-engagement work in my own school. | 77 | 47 | 43 | 10 | 0 | 0 |
| Provided me with at least one idea that I can use to improve dropout prevention and re-engagement efforts in my school/district. | 77 | 57 | 37 | 7 | 0 | 0 |
| Helped my school/district stay energized and sustain momentum related to dropout prevention efforts. | 77 | 47 | 42 | 8 | 4 | 0 |

**Obstacles.** Participants were asked to identify the greatest obstacles to attending the Work Group meetings and regional gatherings.The greatest obstacles, as shown in the table below, were conflicting commitments (63 percent) and the location of the meetings (38 percent). These were also the obstacles to attending Work Group gatherings reported most often in the previous year’s survey. Respondents who reported “other” obstacles explained that they were not able to leave their building during the day (N=3), that other district personnel attended the meetings (N=1), and that there was a lack of interest from team members (N=1).

|  |  |  |
| --- | --- | --- |
| **Obstacles to Attending Work Group Gatherings** | | |
| Survey Item | N | % of Respondents |
| Conflicting commitments | 71 | 63 |
| Location of the meetings | 43 | 38 |
| Not knowing about events until they had already happened | 16 | 14 |
| None of the above | 14 | 13 |
| Availability of substitute teachers | 13 | 12 |
| Other | 9 | 8 |
| Travel costs | 8 | 7 |
| Lack of interest | 2 | 2 |

Participants were also asked about obstacles to participating in webinars. The greatest reported obstacles were conflicting commitments (66 percent) and not knowing about the events until they had already happened (18 percent). Respondents who reported “other” obstacles to attending the webinars explained that they were new to the Work Group (N=1), they did not have time to participate (N=2), and the webinars were inefficient or not a priority (N=2).

|  |  |  |
| --- | --- | --- |
| **Obstacles to Attending Work Group Webinars** | | |
| Survey Item | N | % of Respondents |
| Conflicting commitments | 75 | 66 |
| Not knowing about events until they had already happened | 20 | 18 |
| None of the above | 20 | 18 |
| Technology obstacles that prevented access | 12 | 11 |
| Availability of substitute teachers | 11 | 10 |
| Lack of interest | 9 | 8 |
| Other | 6 | 5 |

**Benefits of participation.** Similar to the previous year’s survey, the majority of respondents who had participated in Work Group events agreed that their participation had provided benefits, as shown in the table below.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Benefits of Participation in Work Group Events** | | | | | | |
| The Work Group has… | N | Strongly Agree  (%) | Agree  (%) | Neutral  (%) | Disagree  (%) | Strongly Disagree  (%) |
| Provided value that motivates me to attend future Work Group events. | 54 | 35 | 44 | 20 | 0 | 0 |
| Provided useful opportunities for districts to learn from each other. | 54 | 39 | 54 | 7 | 0 | 0 |
| Provided useful opportunities for networking. | 53 | 36 | 51 | 11 | 2 | 0 |
| Provided useful opportunities to learn from outside experts in dropout prevention and re-engagement work. | 53 | 38 | 42 | 19 | 2 | 0 |
| Provided useful resources for carrying out dropout prevention and re-engagement work in my own school. | 54 | 33 | 50 | 17 | 0 | 0 |
| Provided me with at least one idea that I can use to improve dropout prevention and recovery efforts in my school/district. | 54 | 37 | 50 | 11 | 2 | 0 |

**Helpfulness of Work Group events.** Most respondents found Work Group events to be very helpful or moderately helpful, including 81 percent for Work Group meetings, 81 percent for webinars, and 78 percent for regional gatherings, as shown in the table below.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Helpfulness of Work Group Events** | | | | | |
| Event | N | Very Helpful  (%) | Moderately Helpful  (%) | Somewhat Helpful  (%) | Not  Helpful  (%) |
| Work Group Meetings | 55 | 60 | 21 | 19 | 0 |
| Webinars | 51 | 50 | 31 | 19 | 0 |
| Regional Gatherings | 50 | 57 | 21 | 21 | 0 |

**Support from ESE.** Respondents were asked about their level of agreement with the statement, “When I have requested support from ESE, I have been satisfied with the support I received.” Seventy-two participants responded. Eighty-two percent (N=58) agreed or strongly agreed, 19 percent (N=12) were neutral, and 1 percent (N=1) disagreed.

**Formats for future trainings/events.** Respondents were asked how likely they would be to participate in future Work Group events and trainings of various forms. Seventy-five to 80 percent responded that they were very likely or moderately likely to attend in-person trainings, in-person networking/sharing opportunities, or facilitated site visits to other schools. Fifty-six percent were very likely or moderately likely to participate in webinars.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Likelihood of Participating in Future Work Group Events** | | | | | |
| Event | N | Very Likely  (%) | Moderately Likely  (%) | Somewhat Likely  (%) | Unlikely  (%) |
| In-person trainings | 111 | 41 | 38 | 16 | 5 |
| In-person networking/sharing opportunities | 113 | 43 | 35 | 20 | 2 |
| Webinars | 110 | 26 | 30 | 32 | 13 |
| Facilitated site visits to other schools | 111 | 38 | 38 | 22 | 3 |

**Possible topics for future events related to dropout prevention and re-engagement**. Respondents were asked to indicate their level of interest in participating in a range of dropout prevention and re-engagement topics. Of the topics presented, respondents were most interested in socio-emotional supports, alternative pathways, and re-engaging dropouts. Respondents were least interested in school discipline, online courses for credit recovery, and middle school supports. Respondents also identified other topics of interest. These included how to fundraise/apply for grants (N=2), cultural competency training (N=2), and guidance on students’ and schools’ legal rights and responsibilities (N=2). One respondent also requested that ESE create a list of schools or districts with comprehensive tracking systems of their interventions/programs/supports that were willing to share or be contacted.

| **Interest in Future Dropout Prevention and Re-engagement Events** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | N | Very Interested | Moderately Interested | Somewhat Interested | Not Interested |
| Re-engaging dropouts | 110 | 64 | 25 | 11 | 0 |
| Alternative pathways | 110 | 69 | 21 | 10 | 0 |
| Socio-emotional supports | 109 | 62 | 32 | 6 | 1 |
| Supporting 9th-grade students | 110 | 56 | 30 | 10 | 5 |
| Summer programming | 106 | 42 | 38 | 15 | 6 |
| Adult advocates (e.g., graduation and re-engagement coaches) | 107 | 43 | 32 | 18 | 8 |
| Online courses for credit recovery | 108 | 37 | 31 | 22 | 10 |
| Middle school supports | 107 | 36 | 30 | 22 | 13 |
| Career development education | 106 | 36 | 41 | 21 | 3 |
| School culture | 110 | 45 | 39 | 15 | 2 |
| Making curriculum and instruction engaging | 106 | 40 | 39 | 17 | 5 |
| Proactive use of data / Early Warning Indicator System | 108 | 30 | 43 | 21 | 7 |
| Community partnerships | 108 | 43 | 42 | 15 | 1 |
| Service learning | 107 | 36 | 40 | 18 | 7 |
| Collaboration with higher education | 108 | 34 | 41 | 23 | 2 |
| School discipline | 109 | 35 | 37 | 23 | 6 |
| English language learners | 110 | 36 | 36 | 20 | 8 |
| Students with disabilities | 108 | 37 | 39 | 21 | 3 |
| Mental health | 107 | 46 | 39 | 13 | 2 |
| Competency-based education | 109 | 41 | 35 | 17 | 7 |
| Individual learning plans (ILPs) | 109 | 36 | 38 | 21 | 6 |

The survey also included two open-ended questions that are summarized below.

**Resource access and utilization.** The survey asked participants to indicate in what ways, if any, the Work Group events have changed the way they access and utilize resources for dropout prevention and re-engagement services, and 19 people responded. Six respondents mentioned Work Group events as increasing networking and increasing partnerships with other schools. Four responded that the Work Group had not changed their utilization of data. Some of their responses were:

*“Networking. I made some contacts with administrators/teachers that I think will be helpful with the redesign of our school/programs.”*

*“We visited an Alternative Pathway program in another high school.”*

*“The work group gave us a wider network and gave our faculty and staff a greater resource for support.”*

*“Energized our team and provided opportunities to see things that are working for other districts.”*

*“None. It is about connecting with students, providing hope and opportunities and creating a graduation plan and supporting and motivating them to execute the plan!”*

**Work Group Gathering** (School Year 2014–15)

**October 2014.** The theme of the October 2014 Work Group gathering was “Supporting Special Populations to Increase High School Graduation Rates.” The meeting began with a welcome and overview of the day and a presentation made by a student speaker. District teams were then given the opportunity to prepare for and engage in a case consultancy session. The day also included breakout sessions featuring promising practices and concluded with a workshop on creating a trauma-sensitive environment within schools. The day’s activities focused on students with disabilities, homeless students, expectant and parenting students, and English language learners.

**Webinars** (School Year 2014–15)

MassGrad also offered a series of eight webinars on college and career readiness topics that all Work Group members were invited to attend. Below are descriptions of the 2014–15 school year webinars.

***September 2014 – CCR data-wise: EWIS, postsecondary reports and DART.*** This webinarprovided an overview of ESE’s Early Warning Indicator System (EWIS) and Postsecondary Readiness and Success reports, which were released in late 2013. ESE also provided a preview of the District Analysis and Review Tools (DARTs), which they said would be available after November 1, 2014.

***October 2014 – Building a positive school culture in the context of the new discipline law*.** This webinar provided an overview of the new Massachusetts discipline law, Chapter 222. ESE reviewed guiding principles for improving school climate and discipline and provided examples of restorative justice practices. Turners Falls High School and Methuen High School presented on their work with restorative justice and provided information on their programs.

***December 2014 – Integration of college and career readiness: The personal/social domain.*** This webinar focused on the social/personal domain of the Commonwealth’s new definition of college and career readiness. ESE identified five course competencies for this domain: self-awareness, self-management, social awareness, relationship skills, and responsible decision-making. The webinar overviewed effective pedagogy, curriculum and instruction, and assessment tools for these competencies. Fall River presented their approach to social emotional learning, highlighting key programmatic successes across the district, as well as implementation strategies at Doran Middle School.

***February 2015 – Graduation and dropout data results***. This webinar focused on cohort graduation rates and annual dropout rates. Rob Curtin, the director of education data services at ESE, explained the calculation of 4-year and 5-year graduation rates, the definition and identification of a cohort, and graduation rate trends from school years 2005–06 to 2013–14 for cohorts and subgroups. He also presented similar information for dropout rates. Worcester then presented the strategies that they had used during the previous five years to improve their graduation rate and decrease their dropout rate. They also discussed their intended next steps and offered advice for other districts regarding their district improvement strategy, theory of action, instructional focus, and methods for differentiated practice.

***March 2015 – Career development education: Career awareness, exploration, and immersion***. This webinar provided state resources and district examples for how to gain competency in the three domains of college and career readiness—learning, workplace readiness, and personal/social qualities and strategies. State resources that were discussed included Connecting Activities, the state’s system of career vocational technical education (CVTE), and the Career Development Education Guide. The work being done by Integrating College and Career Readiness grantees was highlighted. The Lowell Public Schools presented their district’s vision, models, successes, and challenges with regard to career development education. They highlighted their College and Career Center, their use of Naviance software, and their partnership with Middlesex Community College.

***April 2015 – Summer transition programs***. This webinar focused on the transition to high school and summer bridge programs. ESE shared statistics about 9th-grade students in Massachusetts, using data from DART. They also provided an overview of recent research on 9th grade, emphasizing how it can be either “a gatekeeper to opportunity or a springboard to success.” Last, ESE discussed and shared promising practices for summer bridge programs. Lawrence presented on goals, successes, challenges, and advice to other districts regarding their own summer bridge program.

***May 2015 – Individual learning plans.*** This webinar focused on individualized learning

plans (ILPs) for college and career readiness. Lisa Harney of ESE hosted the webinar and provided the

definition of college and career readiness, the main goals of “success after high school,” background on

the Integrating College and Career Readiness Task Force, the definition of an ILP, and resources for

implementing ILPs. Weymouth and Hampden-Wilbraham presented on their ILP process and shared lessons learned and helpful strategies for implementation.

***June 2015 – The Massachusetts Model for Comprehensive School Counseling.*** This webinar focused on defining the “Massachusetts Model,” which sets out the role of counselors in ensuring the success of students in three domains (academic/technical achievement, workplace readiness/career planning, personal and social development). Information was also presented on why the model is successful and tools available for counselors implementing the model. The webinar was hosted by Kate Salas, a school counselor and 21st century skills educator from Pembroke, Massachusetts.

**Regional Gatherings**

ESE held four regional college and career readiness networking sessions between November 2014 and January 2015 in the southeast, central, northeast, and western regions of Massachusetts. The purpose of these sessions was to support teams of district, school, workforce development, higher education, and/or community organization staff members to strategize and develop their college and career readiness work by sharing ideas within and across districts. ESE invited all of their grantees from various college and career readiness programs but did not invite other schools and districts in the region due to capacity limitations.

UMDI attended the western networking session. The agenda included an overview of college and career readiness by ESE, an asset mapping exercise for district teams, a facilitated case consultancy session, content-based breakout sessions, and “office hours” to meet with district teams or check in with ESE staff. Asset mapping allowed districts to assess their existing college and career readiness initiatives, analyze strengths and gaps, and document how to prepare for next steps using an asset map handout and the college and career readiness roadmap rubric. During the case consultancy session, district pairs took turns sharing a dilemma related to college and career readiness. The other district then asked questions and offered advice based on past experience. Each consultancy was facilitated by a member of ESE. Following case consultancies, districts had the opportunity to attend content-based breakout sessions on individual learning plans, career development education, supporting social and emotional skills, or tools to be “data wise” about college and career readiness.

**Awardee Gatherings** (School Year 2014–15)

**May 2015.** This gathering was open to all recipients of a MassGrad Implementation Award to network, share promising practices, and receive training. The day began with a welcome by Jenny Curtin, formerly of ESE, which included a slideshow of pictures from the MassGrad Showcase and time for feedback on the event. ESE then facilitated a game of “MassGrad Truth or Dare.” Truths included: “How would your students describe you? How would your children?,” “If you could be invisible for a day in your district, what would you do?”, and “If you could go on a date with any other district, which would you go out with?” Dares included tasks such as: “Go to another table and get the contact information for one district you would like to learn more about,” “Go ask another district about their success and offer congratulations,” “Teach your table a silly dance move,” and “When anyone says MassGrad, you must yell ‘hooray!’”

After the game, participants were asked to participate in an activity called “future search,” during which they were asked to concentrate on the following:

* Thinking about the past: If you were at risk of dropping out in the past, what did we do?
* Thinking about the present: What are we doing now that’s working?
* Thinking about the future: Given what we have learned in the last 3–5 years, what do we need to be doing in the future, going forward as a district or a state?

Participants were given 5–10 minutes to think about each prompt and write notes independently. Attendees were then asked to share their thoughts by writing notes on boards posted throughout the room. Afterwards, tables were invited up to look over the completed boards and take notes on other people’s ideas and successes. Tables then discussed what they saw on the walls, observed patterns and trends, and commented on whether there was any evolution in thinking. They were also asked to think about how the work has changed or whether it has remained the same. After discussion, tables were encouraged to share their conversations with the room. ESE highlighted successes and challenges they saw.

This was followed by a breakout session in which Implementation awardees reflected on their work for the final year of the MassGrad award. They also discussed the annual student participation data they were required to submit, what they would like to learn from the evaluation, and issues related to spending out their awards.

ESE concluded the meeting by facilitating a discussion on looking ahead. Participants were asked the following questions and were invited to share their thoughts with other attendees.

1. What is your biggest accomplishment to date that is intended to ensure continuity of activities that build off of MassGrad work?
2. What are your immediate next steps to ensure that at-risk students receive appropriate supports in the 2015–16 school year?
3. In what ways can the final evaluation reports from UMDI support your work? What types of information would you find helpful to inform programming or share with stakeholders?
4. How can ESE be helpful in continuing to support your work (e.g., training sessions, guidance)?

# Leadership Council

ESE established a MassGrad Leadership Council that included representatives from a broad range of state agencies and community, statewide, and national organizations. The Council’s purpose was to support and inform MassGrad activities, to provide expertise and training resources, and to connect the project’s services with other Massachusetts dropout reduction and college and career readiness initiatives.

Evaluation activities for the Leadership Council took place during the 2011–12 and 2012–13 school years and were then discontinued at ESE’s request. The Leadership Council met quarterly during this time. Evaluation activities included observations of Leadership Council meetings, interviews with Council members and ESE program managers, an annual online survey of all Council members, and review of relevant documents and records of attendance at Council meetings.

The evaluation did not include a summary brief for the Leadership Council, so more detailed findings are presented here than for some of the other MassGrad initiatives. Additional information about the Leadership Council is presented in the MassGrad annual evaluation reports for the 2012–13 and 2013–14 school years (which are referenced in the introduction of this report).

**Successes**

**Bringing together people who were interested in dropout prevention and re-engagement**. A primary success of the Leadership Council was bringing together people from across the state who shared an interest in dropout prevention and recovery. All respondents to the Leadership Council surveys agreed that Council meetings provided useful opportunities for Council members to learn from each other about dropout prevention and recovery efforts from across the state, and that Council meetings provide useful information about MassGrad-funded activities. Interviewees said that Council meetings served as a sounding board, providing members with a venue to share their ideas and an opportunity to hear from others doing similar work. Several interviewees commented that members of the Council represented diverse professional perspectives and experiences.

**Restructuring the Graduation Coalition.** A major impact of the Leadership Council was in relation to the MassGrad Coalitions. ESE had originally intended to create a single, state-wide coalition of nonprofit, business, and state government organizations that would meet quarterly during the five-year grant period. The Leadership Council suggested to ESE that the coalition would be more effective if it was locally based and targeted to the needs of local communities. In response, ESE substantially changed the coalition’s structure. This resulted in the four coalitions that are described elsewhere in the report.

**Challenges**

**Clarifying the Council’s role.**During one of the initial Leadership Council meetings, members said that they wanted to clarify their purpose and role in relation to the MassGrad initiatives, and that they were eager to provide proactive leadership and direction. One member said, “The primary challenge is figuring out what we can do to have an impact, beyond getting together every quarter to have a discussion. Is there a better role for us? Is there something that we should be doing that we are not doing?” Another member said, “I think the way the grant is constructed, there is a very narrow role for the Leadership Council. Everything is pretty much prescribed, and I am not sure that there is much of an opportunity [for the Council] to brainstorm other ways of addressing the dropout or graduation rate.”

ESE said that the Council primarily served an advisory capacity, and that ideas and suggestions offered by Council members had been useful in promoting and supporting the work of the MassGrad initiative. ESE said that a primary and ongoing challenge was determining how best to engage Council members during meetings. An ESE representative said,

I think it is a continual challenge to structure meetings so people feel like they are getting something out of them and contributing, but not being any more of a burden [to them] than the two hours that they are there…. [The Leadership Council is] a group of very, very busy people who are super passionate about the topic, but are so overcommitted in their professional work…. They want to do a lot, and it’s hard to figure out what those opportunities are and how to structure [the work] in a way that people can actually do it.

In an effort to promote sustained engagement in Council business, ESE consistently facilitated activities at meetings that were designed to elicit feedback from Council members on issues relevant to MassGrad. For example, after the release of the annual dropout rate data, ESE shared dropout results for Implementation Award recipient schools. ESE highlighted districts with increasing or decreasing annual dropout rates, and asked Council members to discuss those sites. At another meeting, ESE asked Council members to provide feedback and guidance regarding a district that was having difficulty finalizing a memorandum of understanding with a partnering institution of higher education.

Despite efforts to promote continued engagement, some members of the Council reported that they were uncertain about the Council’s purpose. An ESE representative said,

Some of the Leadership Council members have said directly to me that they don’t feel like [the Council] has a specific purpose. It does have a specific purpose, and that purpose is to do the things that we have been doing. It’s just that, for the most part, the Council doesn’t have a real *action* focus, by design…. The first two years we kind of batted around how we could make [the Leadership Council] different and more active for the participants. And we have come to accept that this doesn’t really seem like the nature of this Council. I think we will continue with their advisory capacity instead of an active capacity.

**Attendance at Leadership Council meetings**. Interviewees all agreed that attendance at Leadership Council meetings was a challenge. Through school year 2012–13, the average attendance rate was less than 50%. Interviewees and survey respondents noted that many members had limited time to engage in the work, and that inconsistent attendance may have disrupted the continuity of the Council’s work and decreased opportunities for members to engage productively with each other. To improve attendance and engagement, respondents suggested restructuring meeting agendas to allow for more intentional involvement of and collaboration among members, as well as holding meetings more often, including some conference calls.

**ESE’s ability to support the Council’s work.** Two interviewees said that ESE may have lacked the staffing capacity needed to support and fully utilize the Council’s work.One interviewee said, “ESE made a good choice to give out the majority of money to the districts, but it would be nice if there was another half or third [of a staff member’s time dedicated to] working on the Leadership Council, to glue it together the way they would like.” Another interviewee said, “I am sensitive to the fact that the staff [at ESE] is stretched beyond capacity… I would not want the Leadership Council to be draining the staff by asking questions for which they would have to produce information that they weren’t already producing for other reasons.”

**Next Steps**

ESE said that they do not intend to continue the Leadership Council beyond the MassGrad funding period. However, they do plan to sustain working relationships with Council members. An ESE program manager said,

If we wanted to, I think we could keep the Council going beyond the life of MassGrad. At this point, I don’t anticipate wanting to do that because we are already struggling with how to make their time most useful…. I will continue my connections with people, and people have made connections across the group, and I think we will continue to think about [how to use those connections most productively].

# Planning Awards

All MassGrad schools were eligible to apply for competitive awards of $5,000–$15,000 to conduct planning, needs assessment, and pilot interventions to serve students most likely to drop out of high school or who had already dropped out. Awardees were required to build on strategies, policies, and programs that were already in place and address gaps in existing services or procedures. Awards were made to 19 schools in 13 districts, with ten districts each receiving one award and three districts each receiving three awards. The award period was originally intended to be six months long, from April 1 to September 30, 2011, but was later extended through December 31, 2011, due to the timing of fund disbursement.

Evaluation activities for the Planning Awards took place only during the 2011–12 school year. These activities included interviews with ESE program managers, a review of final reports from each site, a survey, and observations of four Awardee Gatherings.

**Findings**

The evaluation did not include a summary brief for the Planning Awards, so more detailed findings are presented here than for some of the other MassGrad initiatives. Additional information about the Planning Awards is presented in the September 2012 MassGrad annual evaluation report which is referenced in the executive summary of this report.

**Successes.** Almost all survey respondents agreed or strongly agreed that the Planning Awards enabled their districts to take meaningful steps toward addressing the needs of students who were most likely to drop out and/or students who had already dropped out, and provided a catalyst for changes that would yield larger improvements over time (see table below). Most respondents agreed or strongly agreed that the funds were used to address pressing needs related to dropout prevention and/or recovery that otherwise probably would not have been addressed during the 2011–12 school year. Most respondents also believed that small awards such as the Planning Awards can have a meaningful impact. One school administrator said, “This money is a great way to design and pilot a small, specific intervention. It was long enough for real planning to occur and covered enough time in the school year to observe implementation.”

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Impacts and Utility of the Planning Awards** | | | | |
| Survey Item | N | Agree or Strongly Agree  (%) | Neutral  (%) | Disagree or Strongly Disagree  (%) |
| The MassGrad Planning funds enabled our district to take meaningful steps toward addressing the needs of students most likely to drop out and/or students that have already dropped out. | 11 | 91 | 9 | 0 |
| The MassGrad Planning funds provided a catalyst for changes that, over time, will yield larger changes related to dropout prevention and recovery. | 11 | 91 | 9 | 0 |
| My district’s MassGrad Planning funds were used to address pressing needs related to dropout prevention and/or recovery that we probably would not have addressed this school year in the absence of these funds. | 11 | 82 | 0 | 18 |
| Reflecting honestly on what my district was able to accomplish with the MassGrad Planning funds, I don’t think that grants of this scope provide enough impact to be a worthwhile investment. | 11 | 9 | 9 | 82 |

Awardees were asked to describe their biggest accomplishments with the Planning Award. Almost all respondents (N=10) indicated that increased communication related to dropout prevention and recovery was a primary success. This took various forms, such as establishing committees, making group decisions, identifying issues and strategies, and presenting findings and recommendations.

Nine respondents also reported increased knowledge regarding the needs and names of their at-risk students, deficiencies in their early warning indicator and record-keeping systems, and programs and activities that need to be developed. Six districts reported that they had either already planned or were planning specific interventions. Six awardees reported success in increasing the number of dropout prevention programs available to students. One district said, “Our biggest accomplishment as a whole is having a student graduate from the pilot program over the summer, and having all of the students that were enrolled end up back on track with the peer group that they entered the building with as freshmen.”

Five respondents noted that they had developed or were now actively using early warning indicator systems to identify at-risk students. Four respondents reported that they had increased access to technology as a learning tool for students, or as an aid for data collection and analysis by staff. Other accomplishments included working with or developing relationships with outside partners or vendors (N=3) and integrating new activities into existing dropout prevention programs (N=2).

**Challenges.** Time was the most common challenge, with four districts reporting that the planning and scheduling processes took much longer than anticipated. One district said, “It is difficult to go to all the ESE sessions, meet as a team, and balance all of the other school functions.” Another district said, “The team felt rushed. We believe it would have worked better if the award had been available for a full school year.”

Three districts cited staff-related issues, such as a new administrative team taking over during the award period. Budget constraints also limited one district’s capacity to staff its programs. This district reported that “the small number of students we have who need significant credit recovery makes it particularly difficult to allocate funding for staff, curriculum, and online platforms.” A third district cited lack of faculty interest and hoped that positive feedback from students in the pilot program would resolve that challenge. Three districts also mentioned the challenge of poor student attendance, with one district obtaining positive results from increased outreach to students, and another district saying:

What was unresolved is how to pull ALL the students in need back into a climate of success. The “why” is multifaceted: financial needs, child care, schedule flexibility all have a part in a student’s unwillingness and/or inability to benefit from existing activities. “Build it and they will come” did not apply to the district at this time for dropouts returning to school.

Finally, challenges cited by two districts each included establishing an academic support system for at-risk students, researching and analyzing data, and obtaining support from key stakeholders. Other challenges, each cited by a single district, included changes in staff priorities, planning for a wide range of grade levels, and focusing on planning rather than implementation.

**Lessons learned.** Respondents were asked what they had learned, and what they would do differently in the future. Six districts had learned the importance of using data to identify at-risk students and target specific student needs. One of these districts had recognized the need to update its record-keeping system.

Five districts reported learning that it was important to include staff members with different expertise and/or the larger community in the planning process, because diverse constituencies learned from each other and produced more useful products. One district said, “It was great to have a dropout committee that included guidance, the school nurse, administration, and regular and special education faculty. This collaboration was very effective, and we learned a great deal from each other.” Four respondents mentioned the importance of establishing a meeting schedule that provided adequate time to plan, review objectives, and analyze data.

Three districts learned that their existing dropout prevention and recovery activities needed improvement, and three additional districts noted the importance of involving students in the planning process. Two districts realized that teachers and staff needed additional support to implement new activities, and that “additional school adjustment counselor staffing is needed to further case manage those students who have dropped out.”

**Unanticipated consequences.** Respondents were asked if they had observed any important but unanticipated consequences of their Planning Award activities. Four respondents said that the activities had increased student and teacher interaction. One district reported that students appreciated having a voice in the planning process, so the district provided opportunities for students to discuss problems and solutions. One respondent said,

Teachers stated that exploration of the data—particularly from student focus groups and student surveys—had an immediate impact on their teaching practices (e.g., clarity of learning objectives, increased vocabulary work, focus on oral interaction, and providing encouragement and informal positive feedback to ELL students).

Respondents also said that teachers are increasingly discussing the issue of dropout prevention among themselves and with students, and that in some cases this has led to improved student-teacher bonds. Three respondents said that Planning Award activities had enhanced relationships among schools within their district. Two districts noted that research and analysis were not only used to identify at-risk students, but also to support the implementation of better teaching practices. Finally, two districts reported that Planning Award activities had increased student and staff motivation.

**Next steps.** Respondents were asked to share their next steps in advancing the work that was supported by the Planning Award. Seven respondents reported collecting or analyzing data as a next step, mentioning plans to examine data from pilot activities, present information to school faculty, and hold joint student record review sessions between middle and high schools. Seven districts also said that they would continue their planning activities, such as using assessment data to plan activities that target student needs.

Six districts planned to continue their piloting and/or implementation activities. Three of these districts planned to implement credit recovery programs, two planned to expand alternative vocational programs, and one each planned to develop graduation coaching, create an early warning indicator system, and review the roles of guidance counselors in order to better serve students and their families.

**Technical support.** Almost all survey respondents (90–100 percent, depending on the item) rated the quality of the email, phone, and site visit support they received from ESE as excellent or good. They were also asked if they had other comments about the support they received from ESE, and five districts thanked ESE for providing quality, professional, and quick responses and support.

Respondents were asked about the two Awardee Gatherings that took place during the Planning Award period, and nine of the respondents reported attending both gatherings. Almost all respondents agreed that the gatherings provided productive opportunities to learn from colleagues from other districts (90 percent), and to network with colleagues from other districts (70 percent). Most (80 percent) also agreed that the gatherings were helpful in supporting their Planning Award activities.

**Conclusions**

Evaluation findings suggest that the Planning Awards assisted schools and districts in their efforts to initiate and/or coordinate dropout prevention and recovery efforts. ESE reported that the awards provided substantial return on a relatively small investment, with a few sites struggling, but most taking significant steps forward in organizing and implementing dropout prevention and recovery efforts. A success reported by a majority of awardees was increased communication related to dropout prevention and recovery. Many also reported that they achieved a better understanding of deficiencies in their early warning indicator and record-keeping systems, needs of their at-risk students, and interventions that should be developed. Several awardees also reported adding new dropout prevention programs. Challenges cited by multiple districts included availability of appropriate staff, establishing academic support systems, researching and analyzing data, and the substantial amount of time needed to plan the award work and coordinate schedules with stakeholders.

# References

Cook, Thomas D., Donald Thomas Campbell, and Arles Day. *Quasi-experimentation: Design & analysis issues for field settings*. Boston: Houghton Mifflin, 1979.

Imbens, Guido W., and Thomas Lemieux. “Regression discontinuity designs: A guide to practice.” *Journal of econometrics* 142, no. 2 (2008): 615-635.

Jacob, Robin Tepper, Pei Zhu, Marie-Andrée Somers, and Howard S. Bloom. *A practical guide to regression discontinuity*. New York: MDRC, 2012.

Linden, Ariel, and John L. Adams. “Applying a propensity score‐based weighting model to interrupted time series data: improving causal inference in programme evaluation.” *Journal of evaluation in clinical practice* 17, no. 6 (2011): 1231-1238.

*MassGrad Implementation Awards case study: School within a school at Attleboro High School, Attleboro, Massachusetts.* Prepared for the Massachusetts Department of Elementary and Secondary Education. University of Massachusetts Donahue Institute. (Hadley, MA, 2015a). Retrieved from <http://www.doe.mass.edu/ccr/massgrad/CaseStudy-Attleboro.pdf>

*MassGrad Implementation Awards case study: Alternative Diploma Program of the United Teen Equality Center, in Lowell, Massachusetts.* Prepared for the Massachusetts Department of Elementary and Secondary Education. University of Massachusetts Donahue Institute. (Hadley, MA, 2015b). Retrieved from <http://www.doe.mass.edu/ccr/massgrad/CaseStudy-Lowell.pdf>

*MassGrad Implementation Awards case study: Drury High School, North Adams, Massachusetts.* Prepared for the Massachusetts Department of Elementary and Secondary Education. University of Massachusetts Donahue Institute. (Hadley, MA, 2015c). Retrieved from <http://www.doe.mass.edu/ccr/massgrad/CaseStudy-NorthAdams.pdf>

*Online courses for credit recovery: Promising practices for high school teachers.* Prepared for the Nellie Mae Foundation. University of Massachusetts Donahue Institute. (Hadley, MA, 2015d). Retrieved from <http://www.nmefoundation.org/resources/student-centered-learning/online-courses-for-credit-recovery-promising-pract>

Rubin, Donald B. “Using propensity scores to help design observational studies: application to the tobacco litigation.” *Health Services and Outcomes Research Methodology* 2, no. 3-4 (2001): 169-188.

What Works Clearinghouse. *Procedures and standards handbook, version 3.0*. (Washington, DC: US

Department of Education, Institute of Education Sciences, 2014). Retrieved from

<http://ies.ed.gov/ncee/wwc/pdf/reference_resources/wwc_procedures_v3_0_standards_handbook.pdf>

# Appendices

**Appendix A – Modeling Procedures for Comparative Interrupted Time Series Analyses**

For each academic discipline (i.e., English language arts, mathematics, and science), a CITS model was developed to assess the impact of the MassGrad intervention on (a) schools’ average achievement gaps in MCAS performance one year after the program began, and (b) the trend (i.e., the slope) of achievement gaps in MCAS scores during the three-year period after the program began. This procedure was used for all 18 of the CITS analysis models. The following equation represents the procedure:

*Yit = β0 + β1Timet, + β2Interventiont + β3TimetInterventiont* ***+*** *β4Participanti + β5ParticipantiTimet + β6ParticipantiInterventiont + β4ParticipantiTimetInterventiont + ui +eit*

In this model, Yit is the outcome measure for a school *i* at time *t*. *Timet* is the time in years since the start of the study. *Interventiont* is an indicator of whether or not a district was participating in the intervention at time *t*. *TimetInterventiont* is an interaction between *Timet* and *Interventiont*. *Participanti* is an indicator for a school *i* that participated in MassGrad. *ParticipantiTimet* , *ParticipantiInterventiont* , and *ParticipantiTimetInterventiont* are interaction terms used in comparisons of multiple groups. Random effects were included to account for district and individual observation effects by adding a random error term for each district (ui) and for each individual observation (eit).

The β0 to β3 coefficients represent the comparison group, and the β4 to β7 coefficients represent differences between the treatment and comparison groups. β1 represents the slope, or trajectory, of the outcome variable until the introduction of the intervention. β2 represents the change in the level of the outcome variable that occurs in the period immediately following the introduction of the intervention. β3 represents the difference between pre- and post-intervention slopes of the outcome. β4 represents the difference in the level (intercept) between treatment and comparison prior to intervention. β5 represents the difference in the slope between treatment and comparison prior to intervention. β6 represents the MassGrad’s impact on schools’ average MCAS performance or achievement gap one year after the program began. β7 represents the impact of the MassGrad intervention on the trend (i.e., the slope) of MCAS scores or achievement gaps during the three-year period after the program began.

Two parameters, β4 and β5, play a role in establishing whether the treatment and comparison groups are balanced on both the level and trajectory of the outcome variable in the pre-intervention period. If these data were from a randomized controlled trial, we would expect similar levels and slopes prior to the intervention. However, in an observational study where equivalence between groups cannot be assumed, any observed differences will likely raise concerns about the ability to draw causal inferences about the relationship between the intervention and the outcomes (Linden and Adams, 2011). When the value for β4 and/or β5 is statistically significant, it indicates that significant differences in MassGrad and comparison schools’ MCAS performance existed prior to intervention.

**Appendix B – MassGrad Impacts on MCAS Achievement Gaps, Parameter Estimates from Comparative Interrupted Time Series Analyses**

The tables below present the results of comparative interrupted time series analyses of MassGrad impacts on student achievement as measured by the grade 10 English Language Arts, Mathematics, and Science MCAS assessments. Results are presented for achievement gaps. Achievement gaps were defined for each school as the difference between the average Composite Performance Index (CPI) score of a reference group (i.e., the group that typically scores higher) and a comparison group.

For each model, β6 represents the impact of the MassGrad intervention on schools’ average achievement gap one year after the program began. β7 represents the impact of the MassGrad intervention on the trend (i.e., the slope) of the MCAS achievement gap during the four-year period after the program began.

| **Impacts of MassGrad on MCAS Achievement Gaps over Time, English Language Arts** | | | | | |
| --- | --- | --- | --- | --- | --- |
|  | Female, Male | White, Afr. Amer./Black | White, Asian | White, Hispanic/Latino | Non-low-income, Low-income |
| Intercept (β0) | 3.10\*\*\* (0.19) | 4.31\*\* (1.47) | -0.66 (0.89) | 7.55\*\*\* (1.28) | 7.07\*\*\* (0.52) |
| Time (β1) | -0.45\*\*\* (0.07) | 0.02 (0.48) | 0.35 (0.32) | -0.47 (0.39) | -0.51\*\* (0.16) |
| Intervention Period (β2) | -0.06 (0.22) | -1.75 (1.58) | -0.91 (1.06) | -2.00 (1.28) | -1.48\*\* (0.52) |
| Time by Intervention (β3) | 0.52\*\*\* (0.10) | -0.38 (0.67) | -0.29 (0.45) | 0.34 (0.55) | 0.23 (0.22) |
| Participant (β4) | 1.68\*\*\* (0.38) | 4.52\* (1.91) | 8.22\*\*\* (2.28) | 5.50\*\* (1.59) | 3.57\*\*\* (0.83) |
| Participant by Time (β5) | 0.18 (0.13) | -0.29 (0.60) | -0.68 (0.59) | -0.13 (0.48) | -0.02 (0.25) |
| Participation by Intervention (β6) | -0.92\* (0.43) | -0.67 (1.99) | -0.96 (1.96) | -1.06 (1.60) | -0.46 (0.82) |
| Participation by Time by Intervention (β7) | -0.12 (0.18) | 0.41 (0.85) | -0.51 (0.84) | 0.34 (0.68) | 0.05 (0.35) |
| + p < 0.1, \*p < .05, \*\**p* < .01, \*\*\**p* < .001  β6 represents the difference in the level between MassGrad and non-MassGrad schools in the 2011–12 school year, the period immediately following intervention. β7 represents the difference between MassGrad and non-MassGrad schools in the slope from the years before the MassGrad intervention (i.e., school years 2008–09 to 2010–11) to the years after the MassGrad intervention (i.e., school years 2011–12 to 2014–15). | | | | | |

| **Impacts of MassGrad on MCAS Achievement Gaps over Time, Mathematics** | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Female, Male | White, Afr. Amer./Black | White, Asian | White, Hispanic/Latino | Non-low-income, Low-income | Non-SWD, SWD | |
| Intercept (β0) | -0.64\* (0.29) | 10.31\*\*\* (1.91) | -2.89\*\* (0.87) | 9.47\*\*\* (1.78) | 8.60\*\*\* (0.75) | 20.84\*\*\* (1.11) | |
| Time (β1) | 0.25\* (0.10) | -0.42 (0.62) | 0.65\* (0.31) | -0.5 (0.49) | -0.51\* (0.20) | -1.25\*\*\* (0.30) | |
| Intervention Period (β2) | 0.48 (0.33) | 0.86 (2.04) | -0.99 (1.02) | -1.45 (1.62) | 0.55 (0.66) | 1.71+ (1.01) | |
| Time by Intervention (β3) | -0.43\*\* (0.14) | -0.13 (0.87) | -0.76+ (0.43) | 1.29+ (0.69) | 0.53+ (0.28) | 2.09\*\*\* (0.43) | |
| Participant (β4) | 0.78 (0.57) | 4.12+ (2.45) | 0.30 (2.33) | 6.18\*\* (2.20) | 3.40\*\* (1.21) | 2.95 (1.88) | |
| Participant by Time (β5) | 0.07 (0.20) | -0.26 (0.77) | -0.91 (0.57) | 0.05 (0.60) | 0.50 (0.32) | 1.98\*\*\* (0.49) | |
| Participation by Intervention (β6) | 0.37 (0.66) | -1.17 (2.55) | 0.71 (1.88) | 1.54 (2.00) | -0.80 (1.06) | -1.67 (1.6) | |
| Participation by Time by Intervention (β7) | -0.53+  (0.28) | 0.91 (1.09) | 0.84 (0.80) | -1.00 (0.85) | -0.43 (0.45) | -2.71\*\*\* (0.69) | |
| + p < 0.1, \*p < .05, \*\**p* < .01, \*\*\**p* < .001 | | | | | | |
| β6 represents the difference in the level between MassGrad and non-MassGrad schools in the 2011–12 school year, the period immediately following intervention. β7 represents the difference between MassGrad and non-MassGrad schools in the slope from the years before the MassGrad intervention (i.e., school years 2008–09 to 2010–11) to the years after the MassGrad intervention (i.e., school years 2011–12 to 2014–15). | | | | | | |

| **Impacts of MassGrad on MCAS Achievement Gaps over Time, Science** | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Female, Male | White, Afr. Amer./Black | White, Asian | White, Hispanic/Latino | Non-low-income, Low-income | Non-SWD, SWD | |
| Intercept (β0) | -1.30\*\*\* (0.28) | 11.47\*\*\* (2.08) | -3.28\*\*\* (0.81) | 12.50\*\*\* (1.58) | 12.40\*\*\* (0.69) | 25.16\*\*\* (0.88) | |
| Time (β1) | 0.28\*\* (0.10) | -0.27 (0.59) | 0.76\*\* (0.29) | -0.47 (0.46) | -0.95\*\*\* (0.19) | -1.90\*\*\* (0.24) | |
| Intervention Period (β2) | -0.56+ (0.32) | -0.73 (1.95) | -1.71+ (0.94) | -1.43 (1.51) | 0.24 (0.62) | 1.87\* (0.80) | |
| Time by Intervention (β3) | 0.06 (0.14) | -0.40 (0.83) | -0.70+ (0.40) | 0.30 (0.64) | 0.68\* (0.27) | 1.75\*\*\* (0.34) | |
| Participant (β4) | -0.17 (0.58) | 3.90 (2.64) | 5.96\* (2.64) | 7.66\*\*\* (1.97) | 4.01\*\*\* (1.14) | -0.78 (1.55) | |
| Participant by Time (β5) | 0.08 (0.19) | -0.29 (0.74) | -0.78 (0.62) | -0.59 (0.56) | 0.03 (0.30) | 1.91\*\*\* (0.40) | |
| Participation by Intervention (β6) | 0.41 (0.62) | -0.97 (2.44) | 0.33 (2.07) | 2.25 (1.86) | -0.04 (1.00) | -3.33\* (1.32) | |
| Participation by Time by Intervention (β7) | -0.24 (0.27) | 0.75 (1.04) | -0.07 (0.88) | 0.04 (0.79) | 0.09 (0.43) | -2.07\*\*\* (0.56) | |
| + p < 0.1, \*p < .05, \*\**p* < .01, \*\*\**p* < .001 | | | | | | |
| β6 represents the difference in the level between MassGrad and non-MassGrad schools in the 2011–12 school year, the period immediately following intervention. β7 represents the difference between MassGrad and non-MassGrad schools in the slope from the years before the MassGrad intervention (i.e., school years 2008–09 to 2010–11) to the years after the MassGrad intervention (i.e., school years 2011–12 to 2014–15). | | | | | | |

**Appendix C – Methods for Implementation Award Analyses**

For the Implementation Award outcome analyses, differences between treatment and comparison group students were assessed using a quasi-experimental matched comparison group design. Multi-level mixed-effect logistic regression analyses were conducted to assess the impact of participation­ on graduation and dropout status. Similarly, a multi-level mixed-effect regression analysis was conducted to assess the impact of participation on participants’ post-intervention MCAS performance and rate of attendance. Carefully selected covariates were included in each analysis to minimize the potential for bias. These covariates included gender, race/ethnicity, low-income status, English language learner status, disability status, grade level, rate of attendance, and pre-intervention MCAS performance. This design enabled strong inferences about the performance of students who participated in the intervention as compared to the expected level of student performance in the absence of the intervention.

Students were not randomly assigned to the intervention. Staff at each site applied their own criteria to assign students to treatment. Therefore, it is likely that there were pre-intervention differences between participating students and non-participating students. These differences could have represented a significant threat (i.e., selection bias) to the validity of the study’s findings. To reduce these differences substantially, propensity score weighting procedures were used, thereby improving the validity of the estimates of program impacts.

In total, 145 models comparing Implementation participants to non-participants were analyzed. For 129 of the 145 models assessed in this study, propensity score weighting results were within the parameters specified in the U.S. Department of Education’s What Works Clearinghouse “Procedures and Standards Handbook” (2014). Data collected were pooled across years, reflecting an assumption that the effects of participation in Implementation programs were similar across years of the study.

Separate sampling and modeling procedures were developed to assess differences in student outcomes during the final year of participation, as well as one, two, and three years after students’ final year of participation. As described in the introduction of the Implementation section of this report, customized sampling procedures were applied to students for whom we had access to single or multiple years of post-intervention outcome data.

**Sample selection.** All students identified by sites as having participated in one or more Implementation strategies were included in the analysis. The resulting treatment samples included a total of 12,454 participants from 28 sites.[[21]](#footnote-21) The comparison sample included all 48,615 students who were enrolled at these sites in the 2011–12, 2012–13, and 2013–14 school years but did not participate in Implementation programs.

The treatment subsamples utilized for graduation and dropout models varied by outcome year (i.e., final year of intervention and one, two, or three years after intervention). Models that assessed graduation outcomes during the final year of intervention included all participants who were in 12th grade in school years 2011–12, 2012–13, 2013–14, or 2014–15. Models that assessed graduation outcomes one year after intervention included all participants who were in 11th or 12th grade in school years 2011–12, 2012–13, or 2013–14. Models that assessed graduation outcomes two years after intervention included all students who were in 10th, 11th, or 12th grade in school years 2011–12 or 2012–13. Models that assessed graduation outcomes three years after intervention included all students who were in 9th, 10th, 11th, or 12th grade in the 2011–12 school year.

Models that assessed dropout outcomes during the year of intervention included all participants from school years 2011–12, 2012–13, 2013–14, and 2014–15. Models that assessed dropout outcomes one year after intervention included all participants from school year 2011–12, 2012–13, and 2013–14. Models that assessed dropout outcomes two years after intervention included all participants from school years 2011–12 and 2012–13. Models that assessed dropout outcomes three years after intervention included all participants from the 2011–12 school year.

Comparison samples also varied by year. Members of the comparison group who were registered at a participating site for multiple years of the study were randomly assigned a “final year of intervention,” and outcomes for those students were assessed from that point in time. For example, a comparison student who was registered in a participating site in school years 2011–12 and 2012–13 but not school years 2013–14 or 2014–15 would have been randomly assigned to school years 2011–12 or 2012–13 as a final year of intervention. Making this assignment was required to carry out the outcome analyses.

A subset of analyses were conducted by Implementation strategy. These analyses were limited to participants for whom we could verify their participation in one or more strategies. Models that assessed outcomes on the grade 10 MCAS included all 9th-grade participants from school years 2011–12, 2012–13, and 2013–14.

**Modeling procedures.** For all students and for all subgroups of interest, mixed-effects logistic regression models were developed to assess the impact of the intervention on graduation and dropout. Mixed-effects logistic regression contains both fixed effects and random effects. The equation below represents the general modeling procedure. When conducting strategy-specific analyses, additional covariates were added to the model to account for impacts that may have been associated with participation in more than one Implementation strategy. For example, when conducting analyses for Alternative Pathways participants, we included six additional covariates to account for possible impacts associated with the other six Implementation strategies. Also, for example, when assessing impacts by gender, the gender covariate was removed from the model.

*Yij* *= β0 + β1*(*Participantij*) *+β2*(*Attendanceij*) *+β3*(*Whiteij*) *+β4*(*Afr. Amer./Blackij*) *+β5*(*Asianij*) *+β6*(*Hispanic/Latinoij*) *+β7*(*Maleij*) *+β8*(*FRLij*) *+β9*(*ELLij*) *+β10*(*SWDij*) *+β11*(*Grade 10ij*) *+β12*(*Grade 11ij*) *+β13*(*Grade 12ij*) *+β14*(*ELA Scaled MCAS Scoreij*) *+β15*(*Mathematics Scaled MCAS Scoreij*) *+β16*(*Science Scaled MCAS Scoreij*) *+ u0j + eij*

For *i =* 1, … , *nj* students,and *j =* 1, … , nsites*.*

Random effects were included to account for site and individual student effects by adding a random error term for each site (*ui*) and for each individual observation (*eij*). *β0* represents the intercept. The coefficients

*β1* through *β16* represent the fixed effects of a given covariate on the outcome (*Yij*).

For this study, the coefficient of greatest interest was *β1*,which represents the estimated impact of program participation on students’ performance on the outcome of interest. Outcomes of interest included graduation (three years after participation, two years after participation, one year after participation, and during the final year of participation), dropout (three years after participation, two years after participation, one year after participation, and during the final year of participation), MCAS performance, and attendance during the final year of participation.

**Appendix D. Implementation Award Regression Analysis Findings**

The body of the report presents only those outcomes that were statistically significant. This appendix presents outcomes for all analyses, regardless of significance.

The values of test statistics (i.e., odds ratios or β values) were reported only for subgroups that had at least 10 students per covariate in the analytic model, plus an additional 10 students for the intercept being estimated. For example, a model with 14 covariates would need to have at least 150 female students in order for the test statistic to be reported for the female subgroup.

| **Impacts of Implementation Award on Graduation Status – Year of Intervention** | | | | | |
| --- | --- | --- | --- | --- | --- |
| Group | Odds Ratio | 95% CI | p-value | N  (Treatment) | N  (Comparison) |
| All | 0.89 | [0.69, 1.16] | 0.39 | 2,461 | 8,241 |
| Femalea | 0.84 | [0.61, 1.15] | 0.27 | 1,161 | 4,216 |
| Malea | 0.92 | [0.68, 1.25] | 0.61 | 1,300 | 4,025 |
| Afr. Amer./Black | 1.27 | [0.65, 2.47] | 0.48 | 644 | 1,096 |
| White | 0.42 | [0.18, 0.97] | 0.04\* | 541 | 3,407 |
| Hispanic/Latinoa | 0.90 | [0.67, 1.22] | 0.51 | 1,162 | 2,848 |
| FRLa | 0.91 | [0.69, 1.20] | 0.49 | 1,998 | 5,027 |
| ELL | 0.88 | [0.53, 1.45] | 0.60 | 243 | 496 |
| SWD | 1.22 | [0.75, 1.97] | 0.42 | 446 | 966 |
| \**p* < 0.05.  aAfter weighting, the treatment and comparison groups were partially balanced.  *Note*: There were too few students (average of 10 students per subgroup) to conduct valid analyses for the following subgroups: Asian. | | | | | |

| **Impacts of Implementation Award on Graduation Status – One Year After Intervention** | | | | | |
| --- | --- | --- | --- | --- | --- |
| Group | Odds Ratio | 95% CI | p-value | N  (Treatment) | N  (Comparison) |
| All | 1.10 | [0.75, 1.60] | 0.64 | 4,071 | 13,402 |
| Female | 1.19 | [0.81, 1.74] | 0.38 | 1,885 | 6,849 |
| Male | 1.13 | [0.83, 1.54] | 0.45 | 2,186 | 6,553 |
| Afr. Amer./Black | 1.46 | [0.65, 3.27] | 0.36 | 995 | 1,792 |
| White | 0.86 | [0.59, 1.24] | 0.41 | 1,009 | 5,451 |
| Hispanic/Latino | 1.03 | [0.82, 1.30] | 0.81 | 1,865 | 4,630 |
| FRL | 1.15 | [0.76, 1.74] | 0.51 | 3,290 | 8,294 |
| ELL | 0.78 | [0.53, 1.17] | 0.23 | 399 | 948 |
| SWD | 1.10 | [0.77, 1.58] | 0.60 | 794 | 1,669 |
| Grade 11 | 1.05 | [0.77, 1.44] | 0.76 | 1,610 | 5,161 |
| Grade 12a | 1.20 | [0.76, 1.90] | 0.44 | 2,461 | 8,241 |
| *Note*: There were too few students (average of 10 students per subgroup) to conduct valid analyses for the following subgroups: Asian.  aAfter weighting, the treatment and comparison groups were partially balanced. | | | | | |

| **Impacts of Implementation Award on Graduation Status – Two Years After Intervention** | | | | | |
| --- | --- | --- | --- | --- | --- |
| Group | Odds Ratio | 95% CI | p-value | N  (Treatment) | N  (Comparison) |
| All | 1.24 | [0.82, 1.88] | 0.31 | 3,242 | 16,554 |
| Female | 1.28 | [0.78, 2.10] | 0.32 | 1,515 | 8,434 |
| Male | 1.17 | [0.83, 1.66] | 0.37 | 1,727 | 8,120 |
| Afr. Amer./Black | 1.69 | [0.67, 4.23] | 0.26 | 708 | 2,081 |
| White | 0.88 | [0.62, 1.26] | 0.50 | 833 | 6,870 |
| Hispanic/Latino | 1.28 | [0.94, 1.74] | 0.12 | 1,543 | 5,733 |
| FRL | 1.29 | [0.79, 2.11] | 0.32 | 2,596 | 10,237 |
| ELL | 0.83 | [0.57, 1.21] | 0.33 | 337 | 1,329 |
| SWD | 1.06 | [0.79, 1.41] | 0.72 | 661 | 2,186 |
| Grade 10 | 1.25 | [0.90, 1.73] | 0.19 | 1,110 | 5,187 |
| Grade 11 | 1.25 | [0.74, 2.10] | 0.41 | 825 | 4,419 |
| Grade 12a | 1.24 | [0.62, 2.48] | 0.54 | 1,307 | 6,948 |
| *Note*: There were too few students (average of 10 students per subgroup) to conduct valid analyses for the following subgroups: Asian.  aAfter weighting, the treatment and comparison groups were partially balanced. | | | | | |

| **Impacts of Implementation Award on Graduation Status – Three Years After Intervention** | | | | | |
| --- | --- | --- | --- | --- | --- |
| Group | Odds Ratio | 95% CI | p-value | N  (Treatment) | N  (Comparison) |
| All | 1.14 | [0.66, 1.97] | 0.63 | 2,170 | 18,188 |
| Female | 1.20 | [0.66, 2.18] | 0.55 | 1,020 | 9,184 |
| Male | 1.04 | [0.63, 1.71] | 0.88 | 1,150 | 9,004 |
| Afr. Amer./Black | 1.64 | [0.73, 3.70] | 0.23 | 482 | 2,167 |
| White | 0.66 | [0.45, 0.98] | 0.04\* | 585 | 7,631 |
| Hispanic/Latino | 1.33 | [0.66, 2.68] | 0.43 | 987 | 6,529 |
| FRL | 1.17 | [0.66, 2.08] | 0.58 | 1,751 | 11,497 |
| ELL | 0.83 | [0.49, 1.40] | 0.49 | 221 | 1,471 |
| SWD | 0.96 | [0.56, 1.67] | 0.89 | 421 | 2,605 |
| Grade 09 | 1.04 | [0.32, 3.44] | 0.94 | 952 | 3,833 |
| Grade 10 | 1.07 | [0.70, 1.63] | 0.76 | 308 | 5,141 |
| Grade 11 | 1.86 | [0.92, 3.77] | 0.09 | 416 | 4,455 |
| Grade 12 | 1.83 | [0.73, 4.56] | 0.20 | 494 | 4,759 |
| \**p* < 0.05.  *Note*: There were too few students (average of 10 students per subgroup) to conduct valid analyses for the following subgroups: Asian. | | | | | |

| **Impacts of Implementation Award on Dropout Status – Year of Intervention** | | | | | |
| --- | --- | --- | --- | --- | --- |
| Group | Odds Ratio | 95% CI | p-value | N  (Treatment) | N  (Comparison) |
| All | 0.37 | [0.26, 0.54] | <0.001\*\*\* | 9,447 | 28,154 |
| Female | 0.36 | [0.22, 0.59] | <0.001\*\*\* | 4,324 | 14,247 |
| Male | 0.39 | [0.27, 0.56] | <0.001\*\*\* | 5,123 | 13,907 |
| Asian | 0.10 | [0.01, 0.78] | 0.03\* | 201 | 2,251 |
| Afr. Amer./Black | 0.28 | [0.18, 0.45] | 0.01\*\* | 2,009 | 3,488 |
| White | 0.57 | [0.33, 0.99] | 0.05\* | 2,339 | 11,363 |
| Hispanic/Latino | 0.32 | [0.21, 0.49] | <0.001\*\*\* | 4,670 | 10,486 |
| ELL | 0.42 | [0.24, 0.74] | 0.01\*\* | 943 | 2,372 |
| SWD | 0.34 | [0.18, 0.62] | <0.001\*\*\* | 1,991 | 3,982 |
| Grade 09 | 0.29 | [0.19, 0.45] | <0.001\*\*\* | 3,379 | 8,546 |
| Grade 10 | 0.40 | [0.22, 0.74] | 0.01\*\* | 1,997 | 6,205 |
| Grade 11 | 0.34 | [0.17, 0.67] | 0.01\*\* | 1,610 | 5,161 |
| Grade 12a | 0.44 | [0.30, 0.67] | <0.001\*\*\* | 2,461 | 8,241 |
| \**p* < 0.05, \*\**p* < 0.01, \*\*\**p* < 0.001.  *Note*: The following models did not converge and are therefore not reported: FRL.  aAfter weighting, the treatment and comparison groups were partially balanced. | | | | | |

| **Impacts of Implementation Award on Dropout Status – One Year After Intervention** | | | | | |
| --- | --- | --- | --- | --- | --- |
| Group | Odds Ratio | 95% CI | p-value | N  (Treatment) | N  (Comparison) |
| All | 0.73 | [0.55, 0.98] | 0.04\* | 9,447 | 28,154 |
| Female | 0.71 | [0.49, 1.02] | 0.06 | 4,324 | 14,247 |
| Male | 0.77 | [0.57, 1.03] | 0.08 | 5,123 | 13,907 |
| Asian | 0.98 | [0.36, 2.67] | 0.96 | 201 | 2,251 |
| Afr. Amer./Black | 0.61 | [0.41, 0.91] | 0.02\* | 2,009 | 3,488 |
| White | 0.95 | [0.73, 1.23] | 0.68 | 2,339 | 11,363 |
| Hispanic/Latino | 0.69 | [0.47, 1.00] | 0.05\* | 4,670 | 10,486 |
| ELL | 1.07 | [0.80, 1.43] | 0.66 | 943 | 2,372 |
| SWD | 0.68 | [0.51, 0.92] | 0.01\*\* | 1,991 | 3,982 |
| Grade 09 | 0.67 | [0.47, 0.98] | 0.04\* | 3,379 | 8,546 |
| Grade 10 | 0.72 | [0.48, 1.08] | 0.11 | 1,997 | 6,205 |
| Grade 11 | 0.83 | [0.59, 1.17] | 0.30 | 1,610 | 5,161 |
| Grade 12a | 0.77 | [0.39, 1.50] | 0.44 | 2,461 | 8,241 |
| \**p* < 0.05, \*\**p* < 0.01.  *Note*: The following models did not converge and are therefore not reported: FRL.  aAfter weighting, the treatment and comparison groups were partially balanced. | | | | | |

| **Impacts of Implementation Award on Dropout Status – Two Years After Intervention** | | | | | |
| --- | --- | --- | --- | --- | --- |
| Group | Odds Ratio | 95% CI | p-value | N  (Treatment) | N  (Comparison) |
| All | 0.85 | [0.61, 1.18] | 0.33 | 5,610 | 22,372 |
| Female | 0.83 | [0.57, 1.2] | 0.33 | 2,611 | 11,318 |
| Male | 0.79 | [0.54, 1.16] | 0.23 | 2,999 | 11,054 |
| Afr. Amer./Black | 0.63 | [0.42, 0.94] | 0.02\* | 1,139 | 2,652 |
| White | 1.24 | [0.93, 1.65] | 0.15 | 1,354 | 9,362 |
| Hispanic/Latino | 0.73 | [0.44, 1.19] | 0.21 | 2,869 | 8,069 |
| FRL | 0.80 | [0.57, 1.14] | 0.22 | 4,628 | 14,011 |
| ELL | 1.20 | [0.84, 1.72] | 0.31 | 585 | 1,779 |
| SWD | 0.78 | [0.52, 1.19] | 0.26 | 1,158 | 3,196 |
| Grade 09 | 0.46 | [0.22, 0.96] | 0.04\* | 2,368 | 5,818 |
| Grade 10 | 1.07 | [0.63, 1.81] | 0.81 | 1,110 | 5,187 |
| Grade 11 | 0.98 | [0.67, 1.42] | 0.92 | 825 | 4,419 |
| Grade 12a | 0.83 | [0.39, 1.73] | 0.61 | 1,307 | 6,948 |
| \**p* < 0.05.  aAfter weighting, the treatment and comparison groups were partially balanced.  *Note*: There were too few students (average of 10 students per subgroup) to conduct valid analyses for the following subgroups: Asian. | | | | | |

| **Impacts of Implementation Award on Dropout Status – Three Years After Intervention** | | | | | |
| --- | --- | --- | --- | --- | --- |
| Group | Odds Ratio | 95% CI | p-value | N  (Treatment) | N  (Comparison) |
| All | 0.69 | [0.40, 1.19] | 0.18 | 2,170 | 18,188 |
| Female | 0.71 | [0.43, 1.18] | 0.18 | 1,020 | 9,184 |
| Male | 0.73 | [0.40, 1.35] | 0.32 | 1,150 | 9,004 |
| Afr. Amer./Black | 0.58 | [0.35, 0.96] | 0.03\* | 482 | 2,167 |
| White | 1.33 | [0.95, 1.85] | 0.09 | 585 | 7,631 |
| Hispanic/Latino | 0.54 | [0.26, 1.13] | 0.10 | 987 | 6,529 |
| FRL | 0.66 | [0.38, 1.15] | 0.14 | 1,751 | 11,497 |
| ELL | 0.95 | [0.63, 1.44] | 0.82 | 221 | 1,471 |
| SWD | 0.71 | [0.36, 1.40] | 0.32 | 421 | 2,605 |
| Grade 09 | 0.42 | [0.14, 1.25] | 0.12 | 952 | 3,833 |
| Grade 10 | 1.33 | [0.84, 2.11] | 0.23 | 308 | 5,141 |
| Grade 11 | 0.71 | [0.40, 1.24] | 0.22 | 416 | 4,455 |
| Grade 12 | 0.53 | [0.27, 1.03] | 0.06 | 494 | 4,759 |
| \**p* < 0.05.  *Note*: There were too few students (average of 10 students per subgroup) to conduct valid analyses for the following subgroups: Asian. | | | | | |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Impacts of Implementation Award on MCAS Scores** | | | | | | |
| Subject | *β* | Effect Size | 95% CI | p-value | N  (Treatment) | N  (Comparison) |
| ELAa | -1.03 | -0.08 | [-1.77, -0.29] | 0.01\*\* | 1,468 | 4,303 |
| Mathematicsa | -1.71 | -0.10 | [-2.99, -0.43] | 0.01\*\* | 1,445 | 4,288 |
| Sciencea | -2.49 | -0.19 | [-3.71, -1.26] | <0.001\*\*\* | 1,469 | 4,371 |
| \*\**p* < 0.01, \*\*\**p* < 0.001.  aAfter weighting, the treatment and comparison groups were partially balanced. | | | | | | |

| **Impacts of Implementation Award on Attendance, Year of Intervention** | | | | | |
| --- | --- | --- | --- | --- | --- |
| Group | Odds Ratio | 95% CI | p-value | N  (Treatment) | N  (Comparison) |
| All | 3.17 | [-0.04, 6.39] | 0.05\* | 9447 | 28154 |
| Female | 2.80 | [-0.82, 6.41] | 0.13 | 4324 | 14247 |
| Male | 3.57 | [0.18, 6.96] | 0.04\* | 5123 | 13907 |
| Asian | 0.04 | [-3.05, 3.13] | 0.98 | 201 | 2251 |
| Afr. Amer./Black | 7.59 | [2.08, 13.10] | 0.01\*\* | 2009 | 3488 |
| White | 0.22 | [-2.09, 2.53] | 0.85 | 2339 | 11363 |
| Hispanic/Latino | 3.35 | [-0.27, 6.97] | 0.07 | 4670 | 10486 |
| FRL | 2.75 | [-0.31, 5.80] | 0.08 | 7763 | 18034 |
| SWD | 0.76 | [-1.48, 3.00] | 0.05\* | 1991 | 3982 |
| Grade 09 | 3.57 | [-0.91, 8.05] | 0.51 | 3379 | 8546 |
| Grade 10 | 3.23 | [-0.46, 6.91] | 0.12 | 1997 | 6206 |
| Grade 11 | 1.41 | [-2.26, 5.08] | 0.09 | 1610 | 5161 |
| Grade 12 | 2.65 | [-4.11, 9.40] | 0.45 | 2461 | 8241 |
| \**p* < 0.05, \*\**p* < 0.01.  *Note*: The following models did not converge and are therefore not reported: ELL. | | | | | |

| **Impacts of Implementation Award on Graduation, Year of Intervention by Strategy** | | | | | |
| --- | --- | --- | --- | --- | --- |
| Group | Odds Ratio | 95% CI | p-value | N  (Treatment) | N  (Comparison) |
| Adult Advocates | 1.40 | [0.8, 2.45] | 0.24 | 902 | 4,483 |
| Alternative Pathways | 0.81 | [0.29, 2.28] | 0.70 | 470 | 3,011 |
| Credit Recovery | 0.91 | [0.70, 1.2] | 0.52 | 1,516 | 6,286 |
| *Note*: There were too few students (average of 10 students per strategy) to conduct valid analyses for the following strategies: Expanded Time, School Climate, Service Learning. | | | | | |

| **Impacts of Implementation Award on Graduation, Year after Intervention by Strategy** | | | | | |
| --- | --- | --- | --- | --- | --- |
| Group | Odds Ratio | 95% CI | p-value | N  (Treatment) | N  (Comparison) |
| Adult Advocates | 0.99 | [0.78, 1.26] | 0.95 | 1,342 | 7,392 |
| Alternative Pathways | 1.11 | [0.44, 2.81] | 0.83 | 736 | 5,735 |
| Credit Recovery | 1.15 | [0.89, 1.47] | 0.29 | 2,497 | 10,118 |
| *Note*: There were too few students (average of 10 students per strategy) to conduct valid analyses for the following strategies: Expanded Time, School Climate, Service Learning. | | | | | |

| **Impacts of Implementation Award on Graduation, Two Years After Intervention by Strategy** | | | | | |
| --- | --- | --- | --- | --- | --- |
| Group | Odds Ratio | 95% CI | p-value | N  (Treatment) | N  (Comparison) |
| Adult Advocates | 0.61 | [0.42, 0.89] | 0.01\*\* | 767 | 9,724 |
| Alternative Pathways | 1.56 | [0.72, 3.34] | 0.26 | 621 | 8,015 |
| Credit Recovery | 1.19 | [0.85, 1.66] | 0.31 | 1,823 | 12,117 |
| \*\**p* < 0.01.  *Note*: There were too few students (average of 10 students per strategy) to conduct valid analyses for the following strategies: Expanded Time, School Climate, Service Learning. | | | | | |

| **Impacts of Implementation Award on Graduation, Three Years After Intervention by Strategy** | | | | | |
| --- | --- | --- | --- | --- | --- |
| Group | Odds Ratio | 95% CI | p-value | N  (Treatment) | N  (Comparison) |
| Adult Advocates | 0.44 | [0.28, 0.68] | <0.001\*\*\* | 532 | 9,578 |
| Alternative Pathways | 1.94 | [0.60, 6.27] | 0.27 | 639 | 8,545 |
| Credit Recovery | 1.17 | [0.74, 1.86] | 0.50 | 969 | 12,549 |
| \*\*\**p* < 0.001.  *Note*: There were too few students (average of 10 students per strategy) to conduct valid analyses for the following strategies: Expanded Time, Positive Climate, Service Learning. | | | | | |

| **Impacts of Implementation Award on Dropout, Year of Intervention by Strategy** | | | | | |
| --- | --- | --- | --- | --- | --- |
| Group | Odds Ratio | 95% CI | p-value | N  (Treatment) | N  (Comparison) |
| Adult Advocates | 0.75 | [0.28, 1.97] | 0.56 | 2,598 | 15,831 |
| Alternative Pathways | 0.19 | [0.05, 0.72] | 0.01\*\* | 2,838 | 14,120 |
| Credit Recovery | 0.38 | [0.15, 0.98] | 0.05\* | 4,392 | 21,577 |
| Positive Climatea | 0.17 | [0.02, 1.57] | 0.12 | 1,158 | 8,205 |
| \* *p* < 0.05, \*\**p* < 0.01.  *Note*: There were too few students (average of 10 students per strategy) to conduct valid analyses for the following strategies: Expanded Time, Service Learning.  aAfter weighting, the treatment and comparison groups were partially balanced. | | | | | |

| **Impacts of Implementation Award on Dropout, Year After Intervention by Strategy** | | | | | |
| --- | --- | --- | --- | --- | --- |
| Group | Odds Ratio | 95% CI | p-value | N  (Treatment) | N  (Comparison) |
| Adult Advocates | 1.58 | [1.05, 2.38] | 0.03\* | 2,598 | 15,831 |
| Alternative Pathways | 0.49 | [0.29, 0.86] | 0.01\*\* | 2,838 | 14,120 |
| Credit Recovery | 0.70 | [0.46, 1.07] | 0.10 | 4,392 | 21,577 |
| Expanded Time | 0.22 | [0.13, 0.37] | <0.001\*\*\* | 1,101 | 6,630 |
| Positive Climatea | 0.80 | [0.55, 1.16] | 0.23 | 1,158 | 8,205 |
| Service Learning | 1.54 | [0.6, 3.92] | 0.37 | 431 | 9,872 |
| \* *p* < 0.05, \*\**p* < 0.01, \*\*\**p* < 0.001.  aAfter weighting, the treatment and comparison groups were partially balanced. | | | | | |

| **Impacts of Implementation Award on Dropout, Two Years After Intervention by Strategy** | | | | | |
| --- | --- | --- | --- | --- | --- |
| Group | Odds Ratio | 95% CI | p-value | N  (Treatment) | N  (Comparison) |
| Adult Advocates | 1.92 | [1.29, 2.86] | 0.01\*\* | 1,288 | 12,406 |
| Alternative Pathways | 0.35 | [0.17, 0.71] | 0.01\*\* | 1,945 | 11,110 |
| Credit Recovery | 0.94 | [0.62, 1.44] | 0.78 | 2,297 | 16,914 |
| Expanded Time | 0.45 | [0.25, 0.78] | 0.01\*\* | 503 | 5,351 |
| School Climatea | 0.88 | [0.64, 1.21] | 0.43 | 583 | 6,817 |
| \*\**p* < 0.01.  *Note*: There were too few students (average of 10 students per strategy) to conduct valid analyses for the following strategies: Service Learning.  aAfter weighting, the treatment and comparison groups were partially balanced. | | | | | |

| **Impacts of Implementation Award on Dropout, Three Years After Intervention by Strategy** | | | | | |
| --- | --- | --- | --- | --- | --- |
| Group | Odds Ratio | 95% CI | p-value | N  (Treatment) | N  (Comparison) |
| Adult Advocates | 2.08 | [1.56, 2.78] | <0.001\*\*\* | 532 | 9,578 |
| Alternative Pathways | 0.42 | [0.13, 1.34] | 0.14 | 639 | 8,545 |
| Credit Recovery | 0.95 | [0.61, 1.47] | 0.82 | 969 | 12,549 |
| School Climatea | 3.17 | [1.9, 5.27] | <0.001\*\*\* | 5,526 | 291 |
| \*\*\**p* < 0.001.  *Note*: There were too few students (average of 10 students per strategy) to conduct valid analyses for the following strategies: Expanded Time, Service Learning.  aAfter weighting, the treatment and comparison groups were partially balanced. | | | | | |

**Appendix E. Summary Briefs – Implementation Awards**

(The Summary Briefs are included in the PDF version of the final report.)

**Appendix F. Summary Brief – Gateway to College**

(The Summary Brief is included in the PDF version of the final report.)

**Appendix G. Summary Brief – MassGrad Coalitions**

(The Summary Brief is included in the PDF version of the final report.)

1. Due to federal requirements, the MassGrad funds given to schools, districts, and institutes of higher education are referred to as “awards,” whereas the overall HSGI award to the Commonwealth of Massachusetts is referred to as a “grant.” [↑](#footnote-ref-1)
2. At the time of this writing, ESE is changing its website structure. Currently four of the summary briefs are posted at <http://www.doe.mass.edu/ccr/massgrad/evalReports.html>. After the restructuring, all seven summary briefs and the three annual evaluation reports may be posted on that same page or may be posted on a different subpage of <http://www.doe.mass.edu/ccr>. [↑](#footnote-ref-2)
3. This finding may seem to contradict the previous paragraph, but both are accurate. Although annual dropout rates decreased more for MassGrad schools than for non-MassGrad Schools, the *rate* of decrease was actually slightly lower for MassGrad Schools than non-MassGrad schools whose 2008–09 annual dropout rates were closest to the cut-point. [↑](#footnote-ref-3)
4. The case studies will be posted on a subpage of http://www.doe.mass.edu/ccr. [↑](#footnote-ref-4)
5. Due to federal requirements, the MassGrad funds given to schools, districts, and institutes of higher education are referred to as “awards,” whereas the overall HSGI award to the Commonwealth of Massachusetts is referred to as a “grant.” [↑](#footnote-ref-5)
6. At the time of this writing, ESE is changing its website structure. Currently four of the summary briefs are posted at <http://www.doe.mass.edu/ccr/massgrad/evalReports.html>. After the restructuring, all seven summary briefs and the three annual evaluation reports may be posted on that same page or may be posted on a different subpage of <http://www.doe.mass.edu/ccr>. [↑](#footnote-ref-6)
7. Treatment and comparison groups were matched on gender, race/ethnicity, low-income status, English language learner status, disability status, grade level, rate of school attendance, and pre-intervention MCAS performance. [↑](#footnote-ref-7)
8. Some schools were missing pre- or post-intervention scores because of school openings, closings, and mergers. [↑](#footnote-ref-8)
9. The distribution of untransformed 2008–09 dropout rates was skewed, and the assumption of homoscedasticity was violated. After transformation, the data distribution was approximately normal, and the assumption of homoscedasticity was not violated. (Both of these conditions are necessary for conducting linear regression). Data were centered at the cut-point to aid in the interpretation of findings. [↑](#footnote-ref-9)
10. Prior to analysis, the following transformations were completed to linearize (i.e., smooth) the relationship between pre- and post-intervention dropout rates and to center the input variable:

    SY09 Annual Dropout Rate (Transformed) = ln(2009 Annual Dropout Rate +1) – 1.37

    SY15 Annual Dropout Rate (Transformed) = ln(2015 Annual Dropout Rate +1) [↑](#footnote-ref-10)
11. One step in the regression discontinuity analysis is to identify a range of pre-intervention scores (both above and below the cut-point) that are similar in level of performance on the outcome variable. The average value of the outcome variable within that range is shown to be representative of outcome values for all cases within that range. Our analysis resulted in a range of dropout rates that was two percent above the cut-point. That is, we found that schools with 2008–09 annual dropout rates between 2.9 percent and 4.9 percent had similar average 2014–15 annual dropout rates. [↑](#footnote-ref-11)
12. MassGrad officially began in the 2010–11 school year. However, most of the MassGrad activities that occurred during that year took place in summer 2011, after students had taken their MCAS exams. The 2011–12 school year was the earliest time that MCAS impacts could be detected. [↑](#footnote-ref-12)
13. This finding may seem to contradict the previous paragraph, but both are accurate. Although annual dropout rates decreased more for MassGrad schools than for non-MassGrad Schools, the *rate* of decrease was actually slightly lower for MassGrad Schools than non-MassGrad schools whose 2008–09 annual dropout rates were closest to the cut-point. [↑](#footnote-ref-13)
14. As noted earlier, MassGrad officially began in the 2010–11 school year, but most of the MassGrad activities that occurred during that year took place in summer 2011. The 2011–12 school year was the earliest time that MassGrad impacts could be detected based on dropout rates, graduation rates, and MCAS scores. [↑](#footnote-ref-14)
15. Lawrence totals are combined across schools because the district submitted a single data report for its three awardee schools. [↑](#footnote-ref-15)
16. Researchers seeking effect sizes can calculate them directly from the reported odds ratios by subtracting one (1). Effect sizes for attendance and MCAS results were calculated separately and are reported in tables. [↑](#footnote-ref-16)
17. This could not be tested for students eligible to receive free and reduced-price lunch, because the model for the final year of participation did not converge. [↑](#footnote-ref-17)
18. Although demographic data were available from GtCNN, we used demographic data from SIMS when available because it is collected consistently across sites, reducing potential errors. In addition, some students with missing GtCNN data were successfully matched to SIMS, increasing the sample size for analyses. [↑](#footnote-ref-18)
19. The case studies will be posted on a subpage of http://www.doe.mass.edu/ccr. [↑](#footnote-ref-19)
20. This table does not capture attendance for the June 2015 webinar on the MA Model for Comprehensive School Counseling, because it occurred after the survey date. [↑](#footnote-ref-20)
21. SIMS data could not be found for 624 of these students, who were subsequently excluded from analysis. Students from the High School Completion Program in Springfield were assigned to their sending school for analysis. [↑](#footnote-ref-21)