

What Works Clearinghouse



Accelerated Middle Schools

Program description Accelerated middle schools are self-contained academic programs designed to help middle school students who are behind grade level catch up with their age peers. If these students begin high school with other students their age, the hope is that they will be more likely to stay in school and graduate. The programs

serve students who are one to two years behind grade level and give them the opportunity to cover an additional year of curriculum during their one to two years in the program. Accelerated middle schools can be structured as separate schools or as schools within a traditional middle school.

Research One study of accelerated middle schools met the What Works Clearinghouse (WWC) evidence standards, and two studies met them with reservations. The three randomized controlled trials included more than 800 students in school districts in Georgia, Michigan, and New Jersey. Based on the three, the WWC

considers the extent of evidence for accelerated middle schools to be medium to large for the staying in school and progressing in school domains. The studies did not examine relevant outcomes in the completing school domain.¹

Effectiveness Accelerated middle schools were found to have potentially positive effects on staying in school and positive effects on progressing in school.

	<i>Staying in school</i>	<i>Progressing in school</i>	<i>Completing school</i>
Rating of effectiveness	Potentially positive effects	Positive effects	na
Improvement index²	Average: +18 percentile points Range: -5 to +33 percentile points	Average: +35 percentile points Range: +15 to +44 percentile points	na

na = not applicable

1. The evidence in this report is based on available research. Findings and conclusions may change as new research becomes available.
 2. These numbers show the average and range of improvement indices for all findings across the studies.

Absence of conflict of interest

The accelerated middle schools studies summarized in this intervention report were conducted by staff of Mathematica Policy Research, Inc. (MPR). Because the principal investigator for the WWC dropout prevention review is an MPR staff member

and was also an author of these studies, they were rated by staff members from ICF International, who also prepared the intervention report. The report was then reviewed by MPR staff members and an external peer reviewer.

Additional program information

Developer and contact

No general contact or developer information is available for accelerated middle schools. Additional information about the program model and the implementation experience of districts that have used it can be found in the Hershey, Adelman, and Murray (1995) report listed in the “References” section of this report.

Scope of use

While many districts operate accelerated middle school programs for students who are behind grade level, the full scope of use of this model is not known. The three accelerated middle schools described in this report—the Griffin-Spalding Middle School Academy in Griffin, Georgia; the Accelerated Academics Academy in Flint, Michigan; and Project Accelerated Curriculum Classes Emphasizing Learning in Newark, New Jersey—were created in the early 1990s as part of the School Dropout Demonstration Assistance Program, under which the U.S. Department of Education awarded grants to school districts and community organizations to implement dropout prevention programs. Of the three accelerated middle schools described in the report, only the Accelerated Academics Academy in Michigan was still operating in 2008.

Description of intervention

Accelerated middle schools aim to help middle school students who are behind grade level “catch up” to their age peers by

covering core academic curriculum at an accelerated pace. Students are typically one to two years behind grade level when they enter the program and cover an additional year of material during their one to two years in the program. To make room in the school day for additional instructional time in core academic subjects, these schools often offer relatively few electives. Accelerated middle schools can be structured either as separate schools or as schools within a traditional middle school. Varying somewhat in their approach to instruction, the programs share several common elements. Classes are often linked thematically across multiple subjects. Instruction is more experiential and “hands on” than is typical in a traditional middle school. The programs generally offer smaller classes than traditional middle schools and provide additional academic and social supports, such as tutoring, attendance monitoring, counseling, and family outreach.

Cost

Researchers estimate the annual per student cost of accelerated middle schools to be more than \$13,000 in New Jersey, about \$11,000 in Michigan, and about \$7,000 in Georgia.³ The annual per student cost exceeded costs in traditional middle schools by about \$5,000 in New Jersey and by about \$2,000 in Michigan. In Georgia the annual per student cost was lower than in a traditional middle school by about \$2,000.

3. See Rosenberg and Hershey (1995). Costs have been converted to 2007 dollars using the consumer price index. Costs have been converted from monthly to annual costs by assuming a 10-month school year.

Research The WWC reviewed three studies of the effectiveness of accelerated middle schools. These three studies were included within one research report (Dynarski, Gleason, Rangarajan, & Wood, 1998). The Dynarski et al. (1998) studies of accelerated middle schools were part of a larger evaluation examining the effectiveness of 16 dropout prevention programs. One of the Dynarski et al. (1998) studies—the one conducted in Newark, New Jersey—met WWC evidence standards. The other two studies—conducted in Griffin, Georgia, and Flint, Michigan—met WWC evidence standards with reservations. The Georgia and Michigan studies received a lower rating because of differential attrition for the intervention and control groups.⁴

The Dynarski et al. (1998) studies in Georgia, Michigan, and New Jersey were all randomized controlled trials in which students were randomly assigned either to the intervention group that was offered admission to the accelerated middle school or to a control group that was not. Students assigned to

the control group generally attended traditional middle schools in the district. The Georgia study included 140 applicants for the 1993/94 school year, the Michigan study 172 applicants for the 1992/93 and 1993/94 school years, and the New Jersey study 535 applicants for the same two school years.

Extent of evidence

The WWC categorizes the extent of evidence in each domain as small or medium to large (see the [What Works Clearinghouse Extent of Evidence Categorization Scheme](#)). The extent of evidence takes into account the number of studies and total sample size across the studies that met WWC evidence standards with or without reservations.⁵

The WWC considers the extent of evidence for accelerated middle schools to be medium to large for staying in school and progressing in school. No studies that met WWC evidence standards examined relevant measures for completing school.

Effectiveness Findings

The WWC review of interventions for dropout prevention addresses student outcomes in three domains: staying in school, progressing in school, and completing school. The Georgia, Michigan, and New Jersey studies by Dynarski et al. (1998) assessed outcomes in the staying in school and progressing in school domains.

Staying in school. In the Michigan study 2% of accelerated middle school students had dropped out of school two years after entering the program, compared with 9% of control-group students, a statistically significant difference. The Georgia study also found a lower dropout rate among accelerated middle school students—6% compared with 14% in the control

group—a difference that was not statistically significant but that is considered substantively important by WWC standards (an effect size greater than 0.25). The New Jersey study found accelerated middle schools had no statistically significant or substantively important effect on dropping out.

Progressing in school. The Georgia, Michigan, and New Jersey studies all found that accelerated middle schools had statistically significant and substantively important effects on progressing in school. In the Georgia study the average number of school years completed at the two-year follow-up was 8.6 for accelerated middle school students and 7.9 for control-group students. In the Michigan study the average number of school years completed at the two-year follow-up was 7.3 for

4. In the Michigan study survey response rates were 89.3% for the intervention group and 83.7% for the control group, exceeding the 5% differential attrition threshold used for WWC dropout prevention reviews. In the Georgia study response rates were 84% for the intervention group and 91% for the control group, also exceeding the 5% threshold.
5. The Extent of Evidence Categorization was developed to tell readers how much evidence was used to determine the intervention rating, focusing on the number and size of studies. Additional factors associated with a related concept, external validity—such as students' demographics and types of settings in which studies took place—are not taken into account for the categorization.

Effectiveness *(continued)*

accelerated middle school students and 6.8 for control-group students. The New Jersey study also found higher average years of school completed for accelerated middle school students—7.8 compared with 7.5 for the control group.

Rating of effectiveness

The WWC rates the effects of an intervention in a given outcome domain as positive, potentially positive, mixed, no discernible

The WWC found accelerated middle schools to have potentially positive effects on staying in school and positive effects on progressing in school

Improvement index

The WWC computes an improvement index for each individual finding. In addition, within each outcome domain, the WWC computes an average improvement index for each study as well as an average improvement index across studies (see [Technical Details of WWC-Conducted Computations](#)). The improvement index represents the difference between the percentile rank of the average student in the intervention condition and that of the average student in the comparison condition. Unlike the rating of effectiveness, the improvement index is based entirely on the size of the effect, regardless of the statistical significance of the effect, the study design, or the analyses. The improvement index can take on values between -50 and +50, with positive numbers denoting results favorable to the intervention group.

Based on the three studies of accelerated middle schools that met evidence standards, the average improvement index

effects, potentially negative, or negative. The rating of effectiveness takes into account four factors: the quality of the research design, the statistical significance of the findings, the size of the difference between participants in the intervention and the comparison conditions, and the consistency in findings across studies (see the [WWC Intervention Rating Scheme](#)).⁶

for staying in school is +18 percentile points, with a range of -5 to +33 percentile points across the studies. Based on these three studies, the average improvement index for progressing in school is +35 percentile points, with a range of +15 to +44 percentile points across the studies.

Summary

The WWC reviewed three studies on accelerated middle schools. One study met WWC evidence standards, and two studies met WWC evidence standards with reservations. Based on these three studies, the WWC found potentially positive effects on staying in school and positive effects on progressing in school. The conclusions in this report may change as new research emerges.

References

Met WWC evidence standards

Dynarski, M., Gleason, P., Rangarajan, A., & Wood, R. (1998). *Impacts of dropout prevention programs: Final report. A research report from the School Dropout Demonstration Assistance Program evaluation*. Princeton, NJ: Mathematica Policy Research, Inc. **(New Jersey study)**

Met WWC evidence standards with reservations

Dynarski, M., Gleason, P., Rangarajan, A., & Wood, R. (1998). *Impacts of dropout prevention programs: Final report. A research report from the School Dropout Demonstration Assistance Program evaluation*. Princeton, NJ: Mathematica Policy Research, Inc. **(Georgia study)**

6. The level of statistical significance was reported by the study authors, or where necessary, calculated by the WWC to correct for clustering within classrooms or schools and for multiple comparisons. For an explanation, see the [WWC Tutorial on Mismatch](#). For the formulas the WWC used to calculate the statistical significance, see [Technical Details of WWC-Conducted Computations](#). For the studies summarized here, no corrections for clustering or multiple comparisons were needed.

References *(continued)*

Dynarski, M., Gleason, P., Rangarajan, A., & Wood, R. (1998). *Impacts of dropout prevention programs: Final report. A research report from the School Dropout Demonstration Assistance Program evaluation*. Princeton, NJ: Mathematica Policy Research, Inc. **(Michigan study)**

Additional sources

Dynarski, M., & Gleason, P. (1998). *How can we help? What we have learned from evaluations of federal dropout-*

prevention programs. Princeton, NJ: Mathematica Policy Research, Inc.

Hershey, A., Adelman, N., & Murray, S. (1995). *Helping kids succeed: Implementation of the School Dropout Demonstration Assistance Program*. Princeton, NJ: Mathematica Policy Research, Inc.

Rosenberg, L., & Hershey, A. (1995). *The cost of dropout prevention programs*. Princeton, NJ: Mathematica Policy Research, Inc.

For more information about specific studies and WWC calculations, please see the [WWC Accelerated Middle Schools Technical Appendices](#).

Appendix

Appendix A1.1 Study Characteristics: Dynarski, Gleason, Rangarajan, & Wood, 1998—Georgia study (randomized controlled trial with differential attrition)

Characteristic	Description
Study citation	Dynarski, M., Gleason, P., Rangarajan, A., & Wood, R. (1998). <i>Impacts of dropout prevention programs: Final report. A research report from the School Dropout Demonstration Assistance Program evaluation</i> . Princeton, NJ: Mathematica Policy Research, Inc.
Participants	<p>The Georgia study used a randomized controlled trial research design. The study sample included one cohort of 160 students who entered the 7th or 8th grade in the Griffin-Spalding (Georgia) school district in the 1993/94 school year. All students had been retained in grade at least once. Eighty students were randomly assigned to the accelerated middle school group and were offered admission to Griffin-Spalding Middle School Academy. The other 80 students were randomly assigned to the control group and generally attended one of the other three traditional middle schools in the district.</p> <p>Participants were, on average, 14-years-old when they entered the program. About 60% of students were African-American; most others were White. More than 70% were male. About three-quarters of participants had discipline problems in the previous school year.</p> <p>Results summarized here are drawn from a follow-up survey administered two years after random assignment: 67 intervention-group students (84%) and 73 control-group students (91%) responded. Because the response rates represent differential attrition of more than 5 percentage points, the What Works Clearinghouse (WWC) rated this study as meeting evidence standards with reservations.</p> <p>Researchers compared the baseline characteristics of follow-up survey respondents in the two research groups on 13 demographic, socioeconomic, and school performance measures. A statistical test of the overall difference between the research groups on the full set of 13 baseline characteristics found that a statistically significant baseline difference did exist between the research groups (at the 0.10 significance level). Study authors report that intervention-group students were more likely to be from two-parent families, less likely to receive public assistance, and less likely to be frequently absent from school. Researchers used regression models to adjust for these differences when estimating the effects of the program.</p>
Setting	The Georgia study was conducted in the Griffin-Spalding school district south of Atlanta, Georgia.

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Characteristic	Description
Intervention	<p>During the evaluation period the Griffin-Spalding Middle School Academy served 7th and 8th graders who had been retained in grade at least once. The school has since closed. The aim of the program was to cover two years of core curriculum content in one year so that students could “leap frog” into grade 9 and rejoin their age peers if they passed all their required courses. For example, students in the academy covered both life science and earth science in one year, whereas, in other district middle schools, a full year was devoted to each of these subjects. The program accepted about 25 students a year from each of the district’s three middle schools. The academy was located in a church building that also housed a similar program for behind-grade-level high school students. The middle and high school programs shared the same teachers, administrators, and other staff.</p> <p>The school emphasized hands-on instruction and downplayed traditional lecture methods. Teachers were given greater flexibility than other district teachers to decide what specific material to cover in their classes. The school used the “SUCCESS” curriculum, which focused on self-esteem and decisionmaking skills, and integrated it into the core curriculum classes. The academy did not assign homework and did not allow students to take books home because staff members were concerned that students would not return the materials. The middle school academy offered few electives—it did not offer art, music, or foreign language—to make additional time in core academic subjects. Students could return to their home middle schools to participate in extracurricular activities. The school employed a part-time counselor to work with students and their families. Information from student follow-up surveys suggests that school staff members referred substantial numbers of students to support services outside school. According to student reports, 42% of intervention-group students were referred to a social service agency for counseling, health needs, or other assistance, compared with only 15% of control-group students (Dynarski et al. 1998).</p>
Comparison	Control-group students typically remained in one of the three traditional middle schools in the Griffin-Spalding school district.
Primary outcomes and measurement	<p>Two relevant outcomes from the Georgia study are included in this summary: the dropout rate and highest grade completed. (For a more detailed description of these outcome measures, see Appendices A2.1 and A2.2.)</p> <p>The study also examined the program’s effects on absenteeism, English and math grades, self-esteem, and perceived likelihood of completing high school. These outcomes do not fall within the three domains examined by the WWC’s review of dropout prevention interventions (staying in school, progressing in school, and completing school) and are not included in this summary.</p>
Staff training	Instructional staff members at Griffin-Spalding Middle School Academy were regular classroom teachers from the Griffin-Spalding district. According to evaluation team researchers, they did not receive additional training as part of their assignment to the academy.

Characteristic	Description
Study citation	Dynarski, M., Gleason, P., Rangarajan, A., & Wood, R. (1998). <i>Impacts of dropout prevention programs: Final report. A research report from the School Dropout Demonstration Assistance Program evaluation</i> . Princeton, NJ: Mathematica Policy Research, Inc.
Participants	<p>The Michigan study used a randomized controlled trial research design. The study sample included 198 students who entered the 6th grade in the Flint Community Schools district in the 1992/93 and 1993/94 school years. All students were two or more years behind grade level and were typically 13- or 14-years-old when they entered the program. One hundred twelve students were randomly assigned to the accelerated middle school group and offered admission to Accelerated Academics Academy. The other 86 students were randomly assigned to the control group and typically attended one of the four traditional middle schools in the district.</p> <p>District staff members identified new students for the academy each spring from 5th graders who were two or more years overage for grade. From this group they selected students they considered most likely to benefit from the accelerated program. They made these assessments based on the students' academic performance, as well as interviews with school staff, parents, and the students themselves.</p> <p>About 60% of students were African-American; most others were White. About 60% were male. About half the participants lived in households that received public assistance. More than two-thirds had had discipline problems in the previous school year.</p> <p>Results summarized here are drawn from a follow-up survey administered two years after random assignment: 100 intervention-group students (89.3%) and 72 control-group students (83.7%) responded. Because these response rates represent differential attrition of more than 5 percentage points, the WWC rated this study as meeting evidence standards with reservations.</p> <p>Researchers compared the baseline characteristics of follow-up survey respondents in the two research groups on 13 demographic, socioeconomic, and school performance measures. A statistical test of the overall difference between the research groups on the full set of 13 baseline characteristics found that the groups were not significantly different at the 0.10 significance level. Even so, researchers used regression models to adjust for small differences in the initial characteristics of intervention- and control-group students when estimating the effects of the program.</p>
Setting	The Michigan study was conducted in the Flint Community Schools school district in Flint, Michigan.

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Characteristic	Description
Intervention	<p>During the evaluation period the Accelerated Academics Academy (AAA) served middle school students who were two or more years behind grade level. (The school continues to operate, but this description focuses on its operations during the evaluation period.) The goal of the program was to accelerate instruction so that behind-grade-level students could enter high school with their age peers. AAA was a self-contained program that occupied an entire floor of a former middle school. The other two floors were occupied by a private school. Enrollment in the school was limited to 100 students.</p> <p>The program offered smaller classes than other middle schools in Flint and placed a greater emphasis on thematic instruction and integrating the curriculum across core academic subjects. Teachers often used nontraditional approaches, such as cooperative learning groups, instructional technology, collaborative teaching, and peer tutoring. The curriculum was flexible and not driven by textbook content. To make the curriculum more relevant and engaging, instruction often centered on current issues and events. AAA offered five core subjects: language arts, mathematics, science, social studies, and art. In addition, the regular schedule was compressed each Wednesday to make room for a “Wonderful Wednesday” class that included a rotating set of topics chosen based on student interests, such as algebra, Spanish, quilting, and science club.</p> <p>Each school day began with a 30-minute “family period” in which a group of 10 students met with a staff member. These sessions could include a mix of activities, such as cooperative learning, tutoring, counseling, silent reading, or group discussions. During the sessions students had the opportunity to discuss issues of concern to them, such as violence in the community, substance use, and family relationships.</p> <p>The school employed a full-time counselor and a full-time social worker for students. This substantial in-house student support may explain why fewer intervention-group students than control-group students reported receiving referrals to outside social service agencies, 5% compared with 18% (Dynarski et al. 1998). The school also employed two paraprofessional “student advocates” who provided in-class tutoring and other supports to students.</p>
Comparison	Control-group students typically attended one of the four traditional middle schools in Flint.
Primary outcomes and measurement	<p>Two relevant outcomes from the Michigan study are included in this summary: the dropout rate and highest grade completed. (For a more detailed description of these outcome measures, see Appendices A2.1 and A2.2.)</p> <p>The study also examined the program’s effects on absenteeism, English and math grades, self-esteem, and perceived likelihood of completing high school. These outcomes do not fall within the three domains examined by the WWC’s review of dropout prevention interventions (staying in school, progressing in school, and completing school) and are not included in this summary.</p>
Staff training	AAA instructional staff members were regular classroom teachers from the Flint Community Schools school district. No additional information was available concerning their training.

Appendix A1.3 Study Characteristics: Dynarski, Gleason, Rangarajan, & Wood, 1998—New Jersey study (randomized controlled trial)

Characteristic	Description
Study citation	Dynarski, M., Gleason, P., Rangarajan, A., & Wood, R. (1998). <i>Impacts of dropout prevention programs: Final report. A research report from the School Dropout Demonstration Assistance Program evaluation</i> . Princeton, NJ: Mathematica Policy Research, Inc.
Participants	<p>The New Jersey study used a randomized controlled trial research design. The study sample included 620 students who entered the 6th or 7th grade in the Newark public schools in the 1992/93 and 1993/94 school years. Of the 620 students in the research sample, 392 were randomly assigned to the accelerated middle school group and offered admission to Project Accelerated Curriculum Classes Emphasizing Learning (ACCEL). The other 228 students were randomly assigned to the control group and did not enroll in the accelerated program.</p> <p>District staff hoped to select students for Project ACCEL who would succeed in an accelerated academic program. For this reason, they used fairly stringent screening criteria. Each spring letters were sent home describing the program to parents of 5th and 6th graders in the district who had been retained in grade at least once. Interested parents had to complete an application. From these applicants participants were selected based on teacher recommendations and student interviews with a team of Project ACCEL staff members.</p> <p>Students in the program were typically 13-years-old. Three-quarters were African-American; most others were Hispanic. About half were male. About half lived in households that received public assistance, and about half had discipline problems in the previous school year.</p> <p>Results summarized here are drawn from a follow-up survey administered two years after random assignment: 341 intervention-group students (87%) and 194 control-group students (85%) responded.</p> <p>Researchers compared the baseline characteristics of follow-up survey respondents in the two research groups on 13 demographic, socioeconomic, and school performance measures. A statistical test of the overall difference between the research groups on the full set of 13 baseline characteristics found that the groups were not significantly different at the 0.10 significance level. Even so, researchers used regression models to adjust for small differences in the initial characteristics of intervention- and control-group students when estimating the effects of the program.</p>
Setting	The New Jersey study was conducted in the Newark Public Schools school district in Newark, New Jersey.

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Characteristic	Description
Intervention	<p>During the study period Project ACCEL served 6th and 7th graders who were retained in grade at least once. (The program is no longer in operation.) The aim of the program was to allow behind-grade-level middle school students to accelerate their studies and “catch up” with their age peers. Sixth graders typically stayed in the program for two years and covered three years of curriculum material. Seventh graders were in the program for one year and covered the 7th and 8th grade curriculum.</p> <p>Project ACCEL operated in five district schools in Newark, some that were organized as K–8 elementary schools and others that were organized as grades 5–8 middle schools. Project ACCEL used a school-within-a-school approach and operated out of a cluster of classrooms within these schools. Each of the five programs served about 50 students, taught by a team of four teachers who each covered one of four subjects: English, math, basic skills, and science/social studies. (In contrast, in other Newark classrooms for middle-grade students at that time teachers typically taught all subjects and worked with only one group of students throughout the day.) Project ACCEL instructional staff used team teaching strategies and collaborated to link the curriculum thematically across subjects. The program had a strong emphasis on discipline and attendance monitoring. Students who missed more than nine days of school were subject to termination from the program. Teachers assigned more homework than was typical in other Newark schools to facilitate the coverage of an accelerated curriculum. Classes were small and generally included 12 or 13 students. One full-time guidance counselor was available to the program and worked closely with ACCEL students and teachers. Consistent with the program’s emphasis on counseling and case management, on follow-up surveys more intervention-group students than control-group students reported having received counseling during the first follow-up year—74% compared with 59%. Similarly, more intervention-group students reported having received a referral to an outside social services agency during this period—27% compared with 15% (Dynarski et al. 1998). Project ACCEL staff members were supervised by the school principal. However, each Project ACCEL team had considerable autonomy in operating their program.</p>
Comparison	Control-group students typically attended a district school and followed the standard curriculum offered by the district.
Primary outcomes and measurement	<p>Two relevant outcomes from the New Jersey study are included in this summary: the dropout rate and the highest grade completed. (For a more detailed description of these outcome measures, see Appendices A2.1 and A2.2.)</p> <p>The study also examined the program’s effects on absenteeism, English and math grades, self-esteem, and perceived likelihood of completing high school. These outcomes do not fall within the three domains examined by the WWC’s review of dropout prevention interventions (staying in school, progressing in school, and completing school) and are not included in this summary.</p>
Staff training	All Project ACCEL staff members attended 1–2 weeks of training each August in preparation for the upcoming school year. The purpose of this training was to plan for the program and to ensure that all Project ACCEL staff members followed the same approach. In addition, all Project ACCEL staff members met as a group five or six times during the school year to discuss program issues.

Appendix A2.1 Outcome measures for the staying in school domain

Outcome measure	Description
Dropped out after two years	The percentage of students who dropped out of school by the end of second follow-up year. These data were collected from student follow-up surveys.

Appendix A2.2 Outcome measures for the progressing in school domain

Outcome measure	Description
Highest grade completed after two years	The grade level completed by the end of the second follow-up year. These data were collected from student follow-up surveys.

Appendix A3.1 Summary of study findings included in the rating for the staying in school domain¹

Outcome measure	Study sample	Sample size (students)	Authors' findings from the study			WWC calculations		
			Mean outcome		Mean difference ² (accelerated middle schools – comparison)	Effect size ³	Statistical significance ⁴ (at $\alpha = 0.05$)	Improvement index ⁵
			Accelerated middle schools group	Comparison group				
Dynarski et al., 1998—Georgia study (randomized controlled trial with differential attrition)⁶								
Dropped out after two years (%)	Full sample	140	6	14	8	0.56	ns	+21
Average for staying in school (Dynarski et al., 1998—Georgia study)⁷						0.56	ns	+21
Dynarski et al., 1998—Michigan study (randomized controlled trial with differential attrition)⁶								
Dropped out after two years (%)	Full sample	172	2	9	7	0.95	Statistically significant	+33
Average for staying in school (Dynarski et al., 1998—Michigan study)⁷						0.95	Statistically significant	+33
Dynarski et al., 1998—New Jersey study (randomized controlled trial)⁶								
Dropped out after two years (%)	Full sample	536	6	5	–1	–0.12	ns	–5
Average for staying in school (Dynarski et al., 1998—New Jersey study)⁷						–0.12	ns	–5
Domain average for staying in school across all studies⁷						0.47	na	+18

1. This appendix reports second-year follow-up findings considered for the effectiveness rating and the improvement index for the staying in school domain. Third-year follow-up findings—available for an early cohort only—are not included in these ratings but are reported in Appendix A4.1.
2. Positive differences and effect sizes favor the intervention group; negative differences and effect sizes favor the comparison group. For the “dropped out” outcome, signs were reversed on the mean difference, effect size, and improvement index, since a reduction in dropping out is a favorable outcome. Means from Dynarski et al. (1998) are estimated using regression models that control for baseline characteristics.
3. For an explanation of the effect size calculation, see [Technical Details of WWC-Conducted Computations](#).
4. Statistical significance is the probability that the difference between groups is a result of chance rather than a real difference between groups.
5. The improvement index represents the difference between the percentile rank of the average student in the intervention condition and that of the average student in the comparison condition. The improvement index can take on values between –50 and +50, with positive numbers denoting results favorable to the intervention group.
6. The level of statistical significance was reported by the study authors or, where necessary, calculated by the WWC to correct for clustering within classrooms or schools and for multiple comparisons. For an explanation about the clustering correction, see the [WWC Tutorial on Mismatch](#). For the formulas the WWC used to calculate statistical significance, see [Technical Details of WWC-Conducted Computations](#). For Dynarski et al.’s (1998) studies, no corrections for clustering or multiple comparisons were needed.
7. The WWC-computed average effect sizes for each study and for the domain across studies are simple averages rounded to two decimal places. The average improvement indices are calculated from the average effect sizes.

ns = not statistically significant

na = not applicable

Appendix A3.2 Summary of study findings included in the rating for the progressing in school domain¹

Outcome measure	Study sample	Sample size (students)	Authors' findings from the study					
			Mean outcome ²		WWC calculations			
			Accelerated middle schools group	Comparison group	Mean difference ³ (accelerated middle schools – comparison)	Effect size ⁴	Statistical significance ⁵ (at $\alpha = 0.05$)	Improvement index ⁶
Dynarski et al., 1998—Georgia study (randomized controlled trial with differential attrition)⁷								
Highest grade completed after two years	Full sample	140	8.6 (0.48)	7.9 (0.42)	0.7	1.53	Statistically significant	+44
Average for progressing in school (Dynarski et al., 1998—Georgia study)⁸						1.53	Statistically significant	+44
Dynarski et al., 1998—Michigan study (randomized controlled trial with differential attrition)⁷								
Highest grade completed after two years	Full sample	172	7.3 (0.37)	6.8 (0.44)	0.5	1.25	Statistically significant	+39
Average for progressing in school (Dynarski et al., 1998—Michigan study)⁸						1.25	Statistically significant	+39

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Appendix A3.2 Summary of study findings included in the rating for the progressing in school domain¹ (continued)

Outcome measure	Study sample	Sample size (students)	Authors' findings from the study					
			Mean outcome ²		WWC calculations			
			Accelerated middle schools group	Comparison group	Mean difference ³ (accelerated middle schools – comparison)	Effect size ⁴	Statistical significance ⁵ (at $\alpha = 0.05$)	Improvement index ⁶
Dynarski et al., 1998—New Jersey study (randomized controlled trial)⁷								
Highest grade completed after two years	Full sample	536	7.8 (0.85)	7.5 (0.70)	0.3	0.38	Statistically significant	+15
Average for progressing in school (Dynarski et al., 1998—New Jersey study)⁸						0.38	Statistically significant	+15
Domain average for progressing in school across all studies⁸						1.06	na	+35

1. This appendix reports second-year follow-up findings considered for the effectiveness rating and the improvement index for the progressing in school domain. Third-year follow-up findings—available for an early cohort only—are not included in these ratings but are reported in Appendix A4.2.
2. The standard deviation across all students in each group shows how dispersed the participants' outcomes are: a smaller standard deviation on a given measure would indicate that participants had more similar outcomes. Standard deviations for highest grade completed are not included in Dynarski et al. (1998) and were reported to the WWC by the study authors.
3. Positive differences and effect sizes favor the intervention group; negative differences and effect sizes favor the comparison group. Means from Dynarski et al. (1998) are estimated using regression models that control for baseline characteristics.
4. For an explanation of the effect size calculation, see [Technical Details of WWC-Conducted Computations](#).
5. Statistical significance is the probability that the difference between groups is a result of chance rather than a real difference between groups.
6. The improvement index represents the difference between the percentile rank of the average student in the intervention condition and that of the average student in the comparison condition. The improvement index can take on values between –50 and +50, with positive numbers denoting results favorable to the intervention group.
7. The level of statistical significance was reported by the study authors or, where necessary, calculated by the WWC to correct for clustering within classrooms or schools and for multiple comparisons. For an explanation about the clustering correction, see the [WWC Tutorial on Mismatch](#). For the formulas the WWC used to calculate statistical significance, see [Technical Details of WWC-Conducted Computations](#). For Dynarski et al.'s (1998) studies, no corrections for clustering or multiple comparisons were needed.
8. The WWC-computed average effect sizes for each study and for the domain across studies are simple averages rounded to two decimal places. The average improvement indices are calculated from the average effect sizes.

na = not applicable

Appendix A4.1 Summary of additional findings for the staying in school domain¹

Outcome measure	Study sample	Sample size (students)	Authors' findings from the study					
			Mean outcome		WWC calculations			
			Accelerated middle schools group	Comparison group	Mean difference ² (accelerated middle schools – comparison)	Effect size ³	Statistical significance ⁴ (at $\alpha = 0.05$)	Improvement index ⁵
Dynarski et al., 1998—Michigan study (randomized controlled trial with differential attrition)⁶								
Dropped out after three years (%)	Early cohort	76	3	17	14	1.13	Statistically significant	+37
Dynarski et al., 1998—New Jersey study (randomized controlled trial)⁶								
Dropped out after three years (%)	Early cohort	296	15	19	4	0.17	ns	+7

1. This appendix reports third-year follow-up findings for dropout rates, which were only available for an early cohort. This early cohort entered the Michigan and New Jersey programs during the 1992/93 school year. Second-year follow-up findings were available for the full sample and were used for determining the effectiveness rating. These results are reported in Appendix A3.1.
2. Positive differences and effect sizes favor the intervention group; negative differences and effect sizes favor the comparison group. For the “dropped out” outcome, signs were reversed on the mean difference, effect size, and improvement index, since a reduction in dropping out is a favorable outcome. Means from Dynarski et al. (1998) are estimated using regression models that control for baseline characteristics.
3. For an explanation of the effect size calculation, see [Technical Details of WWC-Conducted Computations](#).
4. Statistical significance is the probability that the difference between groups is a result of chance, rather than a real difference between groups.
5. The improvement index represents the difference between the percentile rank of the average student in the intervention condition and that of the average student in the comparison condition. The improvement index can take on values between –50 and +50, with positive numbers denoting results favorable to the intervention group.
6. The level of statistical significance was reported by the study authors or, where necessary, calculated by the WWC to correct for clustering within classrooms or schools and for multiple comparisons. For an explanation about the clustering correction, see the [WWC Tutorial on Mismatch](#). For the formulas the WWC used to calculate statistical significance, see [Technical Details of WWC-Conducted Computations](#). For Dynarski et al.’s (1998) studies, no corrections for clustering or multiple comparisons were needed.

ns = not statistically significant

Appendix A4.2 Additional study findings in the progressing in school domain¹

Outcome measure	Study sample	Sample size (students)	Authors' findings from the study		WWC calculations			
			Mean outcome (standard deviation) ²		Mean difference ³ (accelerated middle schools – comparison)	Effect size ⁴	Statistical significance ⁵ (at $\alpha = 0.05$)	Improvement index ⁶
			Accelerated middle schools group	Comparison group				
Dynarski et al., 1998—Michigan study (randomized controlled trial with differential attrition)⁷								
Highest grade completed after three years	Early cohort	76	8.5 (0.32)	7.8 (0.61)	0.7	1.45	Statistically significant	+43
Dynarski et al., 1998—New Jersey study (randomized controlled trial)⁷								
Highest grade completed after three years	Early cohort	296	8.7 (0.78)	8.4 (0.69)	0.3	0.40	Statistically significant	+16

1. This appendix reports third-year follow-up findings for the highest grade completed, which were only available for an early cohort. This early cohort entered the Michigan and New Jersey programs during the 1992/93 school year. Second-year follow-up findings were available for the full sample and were used for determining the effectiveness rating. These results are reported in Appendix A3.2.
2. The standard deviation across all students in each group shows how dispersed the participants' outcomes are: a smaller standard deviation on a given measure would indicate that participants had more similar outcomes. Standard deviations for highest grade completed are not included in Dynarski et al. (1998) and were reported to the WWC by the study authors.
3. Positive differences and effect sizes favor the intervention group; negative differences and effect sizes favor the comparison group. Means from Dynarski et al. (1998) are estimated using regression models that control for baseline characteristics.
4. For an explanation of the effect size calculation, see [Technical Details of WWC-Conducted Computations](#).
5. Statistical significance is the probability that the difference between groups is a result of chance rather than a real difference between groups.
6. The improvement index represents the difference between the percentile rank of the average student in the intervention condition and that of the average student in the comparison condition. The improvement index can take on values between –50 and +50, with positive numbers denoting results favorable to the intervention group.
7. The level of statistical significance was reported by the study authors or, where necessary, calculated by the WWC to correct for clustering within classrooms or schools and for multiple comparisons. For an explanation about the clustering correction, see the [WWC Tutorial on Mismatch](#). For the formulas the WWC used to calculate statistical significance, see [Technical Details of WWC-Conducted Computations](#). For Dynarski et al.'s (1998) studies, no corrections for clustering or multiple comparisons were needed.

Appendix A5.1 Accelerated middle schools rating for the staying in school domain

The WWC rates an intervention's effects for a given outcome domain as positive, potentially positive, mixed, no discernible effects, potentially negative, or negative.¹

For the outcome domain of staying in school, the WWC rated accelerated middle schools as having potentially positive effects. They did not meet the criteria for positive effects because only one study showed statistically significant positive effects. The remaining ratings (mixed effects, no discernible effects, potentially negative effects, and negative effects) were not considered because accelerated middle schools were assigned the highest applicable rating.

Rating received

Potentially positive effects: Evidence of a positive effect with no overriding contrary evidence.

- Criterion 1: At least one study showing a statistically significant or substantively important *positive* effect.

Met. The Michigan study found a statistically significant and substantively important positive effect on staying in school. The Georgia study found an effect on staying in school that was not statistically significant but that was substantively important by WWC standards (an effect size > 0.25).

AND

- Criterion 2: No studies showing a statistically significant or substantively important *negative* effect and fewer or the same number of studies showing *indeterminate* effects than showing statistically significant or substantively important *positive* effects.

Met. No studies found statistically significant or substantively important negative effects. In addition, two of the three studies (those in Michigan and Georgia) found effects that were either statistically significant or substantively important. Only the New Jersey study found indeterminate effects on staying in school.

Other ratings considered

Positive effects: Strong evidence of a *positive* effect with no overriding contrary evidence.

- Criterion 1: Two or more studies showing statistically significant *positive* effects, at least one of which met WWC evidence standards for a *strong* design.

Not met. Only one of three studies found statistically significant positive effects and this study did not have a strong design.

AND

- Criterion 2: No studies showing statistically significant or substantively important *negative* effects.

Met. No studies found statistically significant or substantively important negative effects in this domain.

1. For rating purposes, the WWC considers the statistical significance of individual outcomes and the domain-level effect. The WWC also considers the size of the domain-level effect for ratings of potentially positive or potentially negative effects. For a complete description, see the [WWC Intervention Rating Scheme](#).

Appendix A5.2 Accelerated middle schools rating for the progressing in school domain

The WWC rates an intervention's effects for a given outcome domain as positive, potentially positive, mixed, no discernible effects, potentially negative, or negative.¹

For the outcome domain of progressing in school, the WWC rated accelerated middle schools as having positive effects. The remaining ratings (potentially positive effects, mixed effects, no discernible effects, potentially negative effects, and negative effects) were not considered because accelerated middle schools were assigned the highest applicable rating.

Rating received

Positive effects: Strong evidence of a positive effect with no overriding contrary evidence.

- Criterion 1: Two or more studies showing statistically significant *positive* effects, at least one of which met WWC evidence standards for a *strong* design.

Met. All three studies found statistically significant positive effects, and one of the three studies met WWC evidence standards for a strong design.

AND

- Criterion 2: No studies showing statistically significant or substantively important *negative* effects.

Met. No studies found statistically significant or substantively important negative effects.

1. For rating purposes, the WWC considers the statistical significance of individual outcomes and the domain-level effect. The WWC also considers the size of the domain-level effect for ratings of potentially positive or potentially negative effects. For a complete description, see the [WWC Intervention Rating Scheme](#).

Appendix A6.1 Extent of evidence by domain

Outcome domain	Number of studies	Sample size		Extent of evidence ¹
		Schools	Students	
Staying in school	3	14	848	Medium to large
Progressing in school	3	14	848	Medium to large
Completing school	na	na	na	na

na = not applicable

1. A rating of “medium to large” requires at least two studies and two schools across studies in one domain and a total sample size across studies of at least 350 students or 14 classrooms. Otherwise, the rating is “small.”