

# What Works Clearinghouse



## Dropout Prevention

April 16, 2007

## High School Redirection

**Program description** *High School Redirection* is an alternative high school program for youth considered at risk of dropping out. The program emphasizes basic skills development (with a particular focus on reading skills) and offers limited extra-curricular activities. The schools operate in economically disadvantaged areas and

serve students who have dropped out in the past, who are teen parents, who have poor test scores, or who are over-age for their grade. To foster a sense of community, the schools are small and teachers are encouraged to act as mentors as well as instructors.

**Research** Two studies of *High School Redirection* met the What Works Clearinghouse (WWC) evidence standards and one study met WWC evidence standards with reservations. The three randomized controlled trials included more than 1,600 students in Stockton, California; Wichita, Kansas; and Cincinnati, Ohio.<sup>1</sup>

The WWC considers the extent of evidence for *High School Redirection* to be moderate to large for staying in school, for progressing in school, and for completing school.

**Effectiveness** *High School Redirection* was found to have mixed effects on staying in school, potentially positive effects on progressing in school, and no discernible effects on completing school.

	<i>Staying in school</i>	<i>Progressing in school</i>	<i>Completing school</i>
<b>Rating of effectiveness</b>	Mixed effects	Potentially positive effects	No discernible effects
<b>Improvement index<sup>2</sup></b>	Average: +6 percentile points Range: -5 to +20 percentile points	Average: +4 percentile points Range: -3 to +10 percentile points	Average: +4 percentile points Range: -1 to +8 percentile points

1. The evidence presented 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 *High School Redirection* study that this intervention report summarizes was prepared by staff of Mathematica Policy Research, Inc. (MPR). The principal investigator for the WWC dropout prevention review is an MPR staff member and was the lead author of the *High School Redirection* study. For this

reason, the study was rated by staff members from Caliber, an ICF International Company, who also prepared the intervention report. The report was then reviewed by MPR staff members, as well as members of the WWC Technical Review Team and external peer reviewers.

## Additional program information

### Developer and contact

*High School Redirection* is no longer an active program and no current developer or contact information is available. Additional information about the program model and the implementation experience of districts that have used it can be found in the Baker and Weinbaum (1991) and Rubenstein (1995) reports listed in the “References” section of this report.

### Scope of use

The original *High School Redirection* opened in 1968 as an alternative high school and was operated by the New York City public school system until it closed in 2004. In 1987, the U.S. Department of Labor launched the *Alternative Schools Demonstration Program* (ASDP), which replicated the *High School Redirection* model in seven urban school districts in six states. Because of budget pressures, shifting district priorities, and other factors, these ASDP evaluation schools have all since closed or are no longer following the *High School Redirection* model. Although these programs have ended, *High School Redirection*’s core features—small size, access to child care, and emphasis on academic remediation and accelerated credit accumulation—are shared with many alternative high school programs currently operating throughout the country.

### Description of intervention

*High School Redirection* is an alternative high school model for youth who are at high risk of not completing school. The program emphasizes basic skill development and offers an intensive remedial reading program, Strategies and Techniques

for Advancement in Reading (STAR), for students with serious literacy problems. In many cases, the schools offer opportunities for independent study and accelerated credit accumulation, so that students who have fallen behind can make quick progress toward graduation. Beyond the emphasis on basic reading skills, the program model does not require specific curriculum elements; the schools generally follow the standard curriculum offered by their school district. To help create a sense of community, schools are relatively small—typically with no more than 500 students. Teachers are encouraged to act as mentors as well as instructors and classes are kept small to allow for more individualized attention. The program model calls for on-site child care and limited extracurricular activities. The schools issue standard high school diplomas, operate in low-income areas separate from other high schools, and maintain a degree of autonomy from the local school district in day-to-day policy-making and staff selection. The schools target former dropouts, teen parents, those who are over-age for their grade, and students with low test scores.

### Cost

The cost of *High School Redirection* per student per year of program participation was estimated to be \$3,455 in Cincinnati and \$1,067 in Wichita.<sup>3</sup> These estimates represent the additional cost of the program beyond the cost per year of educating the student in a regular school within the district, which was estimated to be \$7,256 and \$5,686, respectively. No information is available for Stockton.

3. See Weinbaum, A. T., & Baker, A. M. (1991). Costs have been converted to 2006 dollars using the Consumer Price Index.

**Research** Five studies reviewed by the WWC investigated the effectiveness of *High School Redirection*. Three studies were included within one research report (Dynarski & Wood, 1997). This report summarized findings on the effectiveness of the replications of *High School Redirection* sponsored by the U.S. Department of Labor as part of the ASDP evaluation. Two of the Dynarski and Wood (1997) studies—those conducted in Wichita, Kansas, and Cincinnati, Ohio—met WWC evidence standards. A third—conducted in Stockton, California—met evidence standards with reservations. The Stockton study received a lower rating because a substantial number of control group students enrolled in the intervention school.<sup>4</sup> The remaining two studies of *High School Redirection* did not meet WWC evidence screens.

The Dynarski and Wood (1997) studies in Stockton, Wichita, and Cincinnati were all randomized controlled trials in which applicants to the alternative school were assigned either to the intervention group, who were offered admission to the school, or to

a control group, who were not. The Stockton study included 374 youth who applied to enter the program for the 1991–92 school year; the Wichita study included 358 applicants for the 1991–92 and 1992–93 school years; and the Cincinnati study included 902 applicants for the 1993–94 and 1994–95 school years.

### Extent of evidence

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

The WWC considers the extent of evidence for *High School Redirection* to be moderate to large for staying in school, for progressing in school, and 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.

*Staying in school.* One study of *High School Redirection* showed statistically significant effects on staying in school. The Stockton study indicated that *High School Redirection* youth were enrolled 39 more days on average in the first follow-up year than control group youth (110 days versus 71 days) and 17 more days on average in the second follow-up year (67 days versus 50 days). In addition, at the end of the third follow-up year, fewer *High School Redirection* youth had dropped out (43% versus 53%).<sup>6</sup> The other two studies showed no statistically significant or substantively important effects of *High School Redirection* on staying in school.

*Progressing in school.* The Stockton study found that, at the end of the fourth follow-up year, *High School Redirection* youth had, on average, earned more credits toward graduation than control group youth—10.5 versus 8.5 credits—a difference that was statistically significant. The Wichita study found no statistically significant effect on total credits earned. The Cincinnati study did not examine outcomes associated with progressing in school.

*Completing school.* The Stockton study found that, by the end of the third follow-up year, *High School Redirection* youth were more likely than control group youth to have completed high school or earned a GED certificate—40% versus 32%—a difference that was not statistically significant. The Wichita and Cincinnati studies found no difference between the research groups in completing school at the end of the second follow-up year.<sup>7</sup>

4. Since some Stockton control group students attended the intervention school, the estimated effects of *High School Redirection* from the Stockton study are somewhat understated.
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 the types of settings in which studies took place, are not taken into account for the categorization.
6. This difference was statistically significant at the 0.10 level but not at the 0.05 level, the standard used for statistical significance by the WWC.
7. The Cincinnati study did find that *High School Redirection* had a small, statistically significant positive effect on receiving a high school diploma; however, the intervention did not have a significant effect on the combined outcome of receiving either a high school diploma or a GED certificate.

## Effectiveness *(continued)*

**The WWC found *High School Redirection* to have mixed effects on staying in school, potentially positive effects on progressing in school, and no discernible effects on completing school**

### Rating of effectiveness

The WWC rates the effects of an intervention in a given outcome domain as: positive, potentially positive, mixed, no discernible effects, potentially negative, or negative. The rating of effectiveness takes into account four factors: the quality of the research

### 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 and 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 versus the percentile rank 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.

The average improvement index for staying in school is +6 percentile points based on three studies, with a range of

design, the statistical significance of the findings,<sup>8</sup> 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](#)).

–5 to +20 percentile points across the findings. The average improvement index for progressing in school is +4 percentile points based on two studies, with a range of –3 to +10 percentile points across the findings. The average improvement index for completing school is +4 percentile points based on three studies, with a range of –1 to +8 percentile points across the findings.

### Summary

The WWC reviewed five studies of the effectiveness of *High School Redirection*. Two studies met WWC standards, a third met evidence standards with reservations, and the other two did not meet WWC evidence screens. Based on the results from the three qualifying studies, the WWC found mixed effects on staying in school, potentially positive effects on progressing in school, and no discernible effects on completing school. The conclusions presented in this report may change as new research emerges.

## References

### Met WWC evidence standards

#### Wichita study

Dynarski, M., & Wood, R. (1997). *Helping high-risk youth: Results from the Alternative Schools Demonstration Program*. Princeton, NJ: Mathematica Policy Research.

#### Additional sources:

Weinbaum, A. T., & Baker, A. M. (1991). *Final implementation report: High School Redirection replication project*. New York: Academy for Educational Development.

Rubenstein, M. (1995). *Giving students a second chance: The evolution of the Alternative Schools Demonstration Program*. Washington, DC: Policy Studies Associates.

#### Cincinnati study

Dynarski, M., & Wood, R. (1997). *Helping high-risk youth: Results from the Alternative Schools Demonstration Program*. Princeton, NJ: Mathematica Policy Research.

8. 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](#). See [Technical Details of WWC-Conducted Computations](#) for the formulas the WWC used to calculate the statistical significance. In the case of *High School Redirection*, no corrections for clustering were needed.

## References *(continued)*

### **Additional sources:**

- Weinbaum, A. T., & Baker, A. M. (1991). *Final implementation report: High School Redirection replication project*. New York: Academy for Educational Development.
- Rubenstein, M. (1995). *Giving students a second chance: The evolution of the Alternative Schools Demonstration Program*. Washington, DC: Policy Studies Associates.

### **Met WWC evidence standards with reservations**

#### **Stockton study**

- Dynarski, M., & Wood, R. (1997). *Helping high-risk youth: Results from the Alternative Schools Demonstration Program*. Princeton, NJ: Mathematica Policy Research.

### **Additional sources:**

- Weinbaum, A. T., & Baker, A. M. (1991). *Final implementation report: High School Redirection replication project*. New York: Academy for Educational Development.
- Rubenstein, M. (1995). *Giving students a second chance: The evolution of the Alternative Schools Demonstration Program*. Washington, DC: Policy Studies Associates.

### **Did not meet WWC evidence screens**

- Baker, A. M. (1992). Using a theory of dropout prevention to determine the effectiveness of the High School Redirection replication program. *Dissertation Abstracts International* 52(08), 2761A. (UMI No. 9136351)<sup>9</sup>
- Foley, E., & Crull, P. (1984). *Educating the at-risk adolescent: More lessons from alternative high schools. A report*. New York: Public Education Association.<sup>9</sup>

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**For more information about specific studies and WWC calculations, please see the [WWC High School Redirection Technical Appendices](#).**

<sup>9</sup>. Does not use a strong causal design: the study did not use a comparison group.

# Appendix

## Appendix A1.1 Study characteristics: Dynarski & Wood, 1997—Stockton study (randomized controlled trial with control group crossover)

Characteristic	Description
<b>Study citation</b>	Dynarski, M., & Wood, R. (1997). <i>Helping high-risk youth: Results from the Alternative Schools Demonstration Program</i> . Princeton, NJ: Mathematica Policy Research, Inc.
<b>Participants</b>	<p>The Stockton <i>High School Redirection</i> study used a randomized controlled trial research design. Students were assigned to the two research groups using a 2:1 random assignment ratio under which two students were assigned to the intervention group for every one student assigned to the control group. The original study sample of 924 students included two cohorts. Cohort 1 consisted of students who applied to the Model Alternative High School (the replication of <i>High School Redirection</i> in Stockton) prior to or during the 1991–92 school year and included 253 students in the intervention group and 121 students in the control group. Cohort 2 consisted of students who applied prior to or during the 1992–93 school year and included 363 students in the intervention group and 187 students in the control group.</p> <p>The Stockton school district launched a major restructuring effort in the fall of 1993 that merged all its alternative high schools with the Model Alternative High School. This substantially changed the program. It also placed many control group students who had been attending other alternative high schools in the district into the intervention school. Because this district reorganization had a greater effect on Cohort 2 than on Cohort 1, occurring just one year after program entry for the later cohort, the study's authors estimated the program's effects using data for Cohort 1 only. Because of this disruption to the study, the WWC rated this study as meeting evidence standards with reservations.</p> <p>Results summarized here are based on school records, which are available for all 253 intervention students and all 121 control group students in Cohort 1, as well as a follow-up survey administered three years after random assignment. Two hundred and two intervention-group students and 96 control-group students responded to the survey, for response rates of 80% and 79%, respectively.</p> <p>For the students in Cohort 1, researchers compared the baseline characteristics of the two research groups on 12 demographic, socio-economic, and school-related measures. A statistical test of the overall difference between the research groups on the full set of 12 baseline characteristics found that the groups were not significantly different.<sup>1</sup></p> <p>Stockton participants were, on average, just under 17 years old at the time they applied to the <i>High School Redirection</i> program. Almost half (45%) were Hispanic; the rest were divided between whites, African-Americans, and other racial and ethnic groups. Participants were evenly split between males and females. Over half (55%) had dropped out of school before applying to the alternative high school.</p>
<b>Setting</b>	This study took place at the Model Alternative High School, an alternative high school in Stockton, California.
<b>Intervention</b>	<p>The Model Alternative High School was a replication of <i>High School Redirection</i> and was part of the U.S. Department of Labor's Alternative Schools Demonstration Program (ASDP) evaluation. The Stockton school included most of the key features of the <i>High School Redirection</i> model specified by the ASDP evaluation: granting regular high school diplomas, taking students from throughout the district, offering the STAR remedial reading program to those with serious literacy problems, providing on-site child care, offering no extra-curricular activities, and operating with considerable autonomy from the local district.</p> <p>During the evaluation period, the program enrolled approximately 600 students and held both morning and afternoon sessions in order to accommodate more students. Accumulating credits toward graduation was the primary goal of many of the Model Alternative students. Therefore, the school's independent study option—under which students could complete assigned work on their own time and away from school—was quite popular (Rubenstein, 1995). Besides this independent study option, the school followed the district's core curriculum without modification.</p>

(continued)

Appendix A1.1

Study characteristics: Dynarski & Wood, 1997—Stockton study (randomized controlled trial with control group crossover) (continued)

Characteristic	Description
Comparison	Control group students could attend other district high schools that did not implement the <i>High School Redirection</i> model. In some cases, these students attended other alternative high schools for at-risk students operated by the district. Beginning with the 1992–93 school year, these other alternative education programs were located on the same campus as the Model Alternative High School. In 1993–94, these other programs were merged with Model Alternative. According to district records, in the first two years after random assignment (representing the 1991–92 and 1992–93 school years), 24% of control group students attended one of the alternative programs that merged with Model Alternative in the fall of 1993.
Primary outcomes and measurement	Five relevant outcomes from the Stockton <i>High School Redirection</i> study were used for rating purposes: number of days enrolled in a district high school during the first follow-up year, number of days enrolled in a district high school during the second follow-up year, dropped out at the end of the third follow-up year, cumulative credits earned by the end of the fourth follow-up year, and graduated or earned a GED certificate by the end of the third follow-up year. (See Appendices A2.1, A2.2, and A2.3 for a more detailed description of outcome measures.)
Teacher training	Model Alternative High School teachers were regular high school teachers employed by the Stockton Public Schools. No additional information about specific training they received was available.

1. These Cohort 1 specific baseline characteristics were not included in the original report, but were provided to the WWC by the study’s authors.



## Appendix A1.2 Study characteristics: Dynarski & Wood, 1997—Wichita study (randomized controlled trial)

Characteristic	Description
<b>Study citation</b>	Dynarski, M., & Wood, R. (1997). <i>Helping high-risk youth: Results from the Alternative Schools Demonstration Program</i> . Princeton, NJ: Mathematica Policy Research.
<b>Participants</b>	<p>The Wichita <i>High School Redirection</i> study used a randomized controlled trial research design. Students were assigned to the two research groups using a 2:1 random assignment ratio under which two students were assigned to the intervention group for every one student assigned to the control group. The study sample of 358 students included two cohorts. Cohort 1 consisted of students who applied to Metro-Midtown Alternative High School (the replication of <i>High School Redirection</i> in Wichita) prior to or during the 1991–92 school year and included 162 students in the intervention group and 78 students in the control group. Cohort 2 consisted of students who applied prior to or during the 1992–93 school year and included 79 students in the intervention group and 39 students in the control group.</p> <p>Results summarized here are based on school records, which are available for all 241 intervention students and all 117 control group students in the two cohorts, as well as a follow-up survey administered two years after random assignment. Two hundred and two intervention-group students and 108 control-group students responded to the survey, for response rates of 84% and 88%, respectively.</p> <p>Researchers compared the baseline characteristics of the two research groups on 12 demographic, socio-economic, and school-related measures. A statistical test of the overall difference between the research groups on the full set of 12 baseline characteristics found that the groups were not significantly different.</p> <p>Wichita participants were, on average, 17 years old at the time they applied to the <i>High School Redirection</i> program. Almost half (45%) were white. About 4 in 10 were African-American and about 1 in 10 was Hispanic. Participants were evenly split between males and females. About half (53%) had dropped out of school before applying to the alternative high school.</p>
<b>Setting</b>	The study was conducted at the Metro-Midtown Alternative High School, an alternative high school in Wichita, Kansas.
<b>Intervention</b>	<p>The Metro-Midtown Alternative High School was a replication of <i>High School Redirection</i> and was part of the U.S. Department of Labor’s Alternative Schools Demonstration Program (ASDP) evaluation. The Wichita school included most of the key features of the <i>High School Redirection</i> model specified by the ASDP evaluation: granting regular high school diplomas, taking students from throughout the district, offering the STAR remedial reading program to those with serious literacy problems, providing on-site child care, offering no extra-curricular activities, and operating with considerable autonomy from the local district.</p> <p>During the evaluation period, the program enrolled approximately 300 students and held both daytime and evening sessions. The school offered the standard district curriculum. Teachers set up individual programs of instruction for each student, and students were able to progress at their own pace (Rubenstein, 1995).</p>
<b>Comparison</b>	Control group students could attend other district high schools that did not implement the <i>High School Redirection</i> model. In some cases, these students may have attended one of the two other alternative high schools operated by the district. Later in the evaluation, the district began admitting some control group students to Metro-Midtown Alternative High School if they applied again after having been originally turned away. During the first two years after random assignment, 13% of control group students spent some time enrolled in Metro-Midtown.
<b>Primary outcomes and measurement</b>	Five relevant outcomes from the Wichita <i>High School Redirection</i> study were used for rating purposes: number of days enrolled in a district high school during the first follow-up year, number of days enrolled in a district high school during the second follow-up year, dropped out by the end of the second follow-up year, cumulative credits earned by the end of the fourth follow-up year, and graduated or earned a GED certificate by the end of the second follow-up year. (See Appendices A2.1, A2.2, and A2.3 for a more detailed description of outcome measures.)
<b>Teacher training</b>	Metro-Midtown Alternative High School teachers were regular high school teachers employed by the Wichita Public Schools. No additional information about specific training they received was available.



## Appendix A1.3 Study characteristics: Dynarski & Wood, 1997—Cincinnati study (randomized controlled trial)

Characteristic	Description
<b>Study citation</b>	Dynarski, M., & Wood, R. (1997). <i>Helping high-risk youth: Results from the Alternative Schools Demonstration Program</i> . Princeton, NJ: Mathematica Policy Research.
<b>Participants</b>	<p>The Cincinnati <i>High School Redirection</i> study used a randomized controlled trial research design. Students were assigned to the two research groups using a 2:1 random assignment ratio under which two students were assigned to the intervention group for every one student assigned to the control group. The study sample of 902 students included two cohorts. Cohort 1 consisted of students who applied to Clark Academy (the replication of <i>High School Redirection</i> in Cincinnati) prior to or during the 1993–94 school year and included 390 students in the intervention group and 185 students in the control group. Cohort 2 consisted of students who applied prior to or during the 1994–95 school year and included 222 students in the intervention group and 105 students in the control group.</p> <p>Results summarized here are based on school records, which are available for all 612 intervention students and all 290 control group students in the two cohorts. Researchers compared the baseline characteristics of the two research groups on 12 demographic, socio-economic, and school-related measures. A statistical test of the overall difference between the research groups on the full set of 12 baseline characteristics found that the groups were not significantly different.</p> <p>Cincinnati study participants were, on average, 17.6 years old at the time they applied to the <i>High School Redirection</i> program. Most (82%) were African-American. Just over half of participants (54%) were female. Over a third were teenage parents. About 6 in 10 had dropped out of school before applying to the alternative high school.</p>
<b>Setting</b>	The study was conducted at the Peter H. Clark Academy, an alternative high school in Cincinnati, Ohio.
<b>Intervention</b>	<p>The Peter H. Clark Academy was a replication of <i>High School Redirection</i> and was part of the U.S. Department of Labor's Alternative Schools Demonstration Program (ASDP) evaluation. The Cincinnati school included most of the key features of the <i>High School Redirection</i> model specified by the ASDP evaluation: granting regular high school diplomas, taking students from throughout the district, offering the STAR remedial reading program to those with serious literacy problems, offering no extra-curricular activities, and operating with considerable autonomy from the local district.</p> <p>The program had capacity for 250 students and operated out of a converted elementary school in a poor neighborhood of Cincinnati. Unlike the other <i>High School Redirection</i> replication sites summarized in this report, the program did not offer on-site child care. Instead, it offered off-site child care and van service between the school and the daycare facility. The school developed a special curriculum for ninth grade in which educational themes were integrated across the curriculum. The school also offered a modified English curriculum that allowed some students to earn graduation credits at an accelerated pace. Beyond these two modifications, the school offered the standard district curriculum (Rubenstein, 1995).</p>
<b>Comparison</b>	Control group students could attend other district high schools that did not implement the <i>High School Redirection</i> model. At the time of the ASDP evaluation, the Cincinnati Public Schools offered few other alternative education programs for at-risk students besides the Peter H. Clark Academy.
<b>Primary outcomes and measurement</b>	Two relevant outcomes from the Cincinnati <i>High School Redirection</i> study were used for rating purposes: dropped out at the end of the second follow-up year and graduated or earned a GED certificate by the end of the second follow-up year. (See Appendices A2.1, A2.2, and A2.3 for a more detailed description of outcome measures.)
<b>Teacher training</b>	Clark Academy teachers were regular high school teachers employed by the Cincinnati Public Schools. No additional information about specific training they received was available.

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

Outcome measure	Description
<b>Number of days enrolled in year 1</b>	This measure represents the number of days that students were enrolled in a district high school during the first follow-up year. These data were collected through school records for the Stockton and Wichita studies. This measure was not available in the Cincinnati study.
<b>Number of days enrolled in year 2</b>	This measure represents the number of days that students were enrolled in a district high school during the second follow-up year. These data were collected through school records for the Stockton and Wichita studies. This measure was not available in the Cincinnati study.
<b>Dropped out</b>	This binary measure represents whether a student has dropped out of school. In the Stockton and Wichita studies, this outcome is based on follow-up survey data and is defined as not being enrolled in any school or GED program and not having earned a high school diploma or GED certificate. For the Stockton study, the outcome is measured at the end of year 3; for the Wichita study, it is measured at the end of year 2. In the Cincinnati study, this outcome is based on school records data, as well as GED testing data maintained by the Ohio Department of Education. It is measured at the end of year 2 and represents not being enrolled in a district high school and not having earned a district diploma or a GED certificate in the state. It does not include enrollment in a GED program.

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

Outcome measure	Description
<b>Total credits earned</b>	This measure represents the cumulative number of credits that students earned by the end of the fourth follow-up year. For the Stockton and Wichita studies, these data were collected through school records. This measure was not available for the Cincinnati study.

## Appendix A2.3 Outcome measures for the completing school domain

Outcome measure	Description
<b>Earned a high school diploma or GED</b>	This binary measure represents the percentage of students that earned a high school diploma or GED certificate at a particular point after random assignment. In the Stockton and Wichita studies, this outcome is based on follow-up survey data and is defined as having earned a diploma from any high school or a GED certificate in any state. For the Stockton study, the outcome is measured at the end of year 3; for the Wichita study, it is measured at the end of year 2. In the Cincinnati study, this outcome is measured at the end of year 2 and represents having graduated from a district high school or having earned a district diploma or a GED certificate in Ohio. The measure is based on school records data, as well as GED testing data that were provided by the Ohio Department of Education.

## Appendix A3.1 Summary of study findings included in the rating for the staying in school domain<sup>1</sup>

Outcome measure	Study sample	Sample size (students)	Author's findings from the study		WWC calculations			
			Mean outcome (standard deviation <sup>2</sup> )		Mean difference <sup>3</sup> (High School Redirection – comparison)	Effect size <sup>4</sup>	Statistical significance <sup>5</sup> (at $\alpha = 0.05$ )	Improvement index <sup>6</sup>
			High School Redirection group	Comparison group				
Dynarski and Wood, 1997 (randomized controlled trial with control group crossover) <sup>7</sup> —Stockton								
Number of days enrolled in year 1	Cohort 1	374	110 (71)	71 (78)	39	0.53	Statistically significant	+20
Number of days enrolled in year 2	Cohort 1	374	67 (78)	50 (73)	17	0.22	Statistically significant	+9
Dropped out at end of year 3 (%)	Cohort 1	298	43	53	10	0.24	ns	+9
Average <sup>8</sup> for staying in school (Dynarski and Wood, 1997)—Stockton						0.33	Statistically significant	+13
Dynarski and Wood, 1997 (randomized controlled trial) <sup>7</sup> —Wichita								
Number of days enrolled in year 1	Cohorts 1 and 2	358	108 (64)	94 (73)	14	0.21	ns	+8
Number of days enrolled in year 2	Cohorts 1 and 2	358	59 (77)	60 (73)	−1	−0.01	ns	0
Dropped out at end of year 2 (%)	Cohorts 1 and 2	310	51	46	−5	−0.12	ns	−5
Average <sup>8</sup> for staying in school (Dynarski and Wood, 1997)—Wichita						0.03	ns	+1
Dynarski and Wood, 1997 (randomized controlled trial) <sup>7</sup> —Cincinnati								
Dropped out at end of year 2 (%)	Cohorts 1 and 2	902	80	83	3	0.12	ns	+5
Average <sup>8</sup> for staying in school (Dynarski and Wood, 1997)—Cincinnati						0.12	ns	+5
Domain average <sup>8</sup> for staying in school						0.16	na	+6

ns = not statistically significant

na = not applicable

1. This appendix reports findings considered for the effectiveness rating and the average improvement index in the staying in school domain.
2. Standard deviations are reported for continuous outcomes only. 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 number of days enrolled were not included in Dynarski and Wood (1997), but were reported to the WWC by the study's authors.
3. Positive differences and effect sizes favor the intervention group; negative differences and effect sizes favor the comparison group. For the dropout outcome, signs were reversed on the mean difference, effect size, and improvement index to demonstrate that the treatment group was favored when negative differences were reported. Means from Dynarski and Wood (1997) are estimated using regression models that control for baseline characteristics.
4. The effect sizes for dichotomous variables were computed using the Cox Index. For an explanation of the effect size calculation, see [Technical Details of WWC-Conducted Computations](#).

(continued)

## Appendix A3.1 Summary of study findings included in the rating for the staying in school domain *(continued)*

5. Statistical significance is the probability that the difference between the groups is a result of chance rather than a real difference between the groups. Although the study authors originally reported statistical significance using a  $p < 0.10$  threshold, all analyses were redone by the WWC to test for statistical significance using a  $p < 0.05$  threshold.
6. The improvement index represents the difference between the percentile rank of the average student in the intervention condition and 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](#). See [Technical Details of WWC-Conducted Computations](#) for the formulas the WWC used to calculate statistical significance. In the case of the Dynarski and Wood (1997) Stockton, Wichita, and Cincinnati studies, no corrections for clustering 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.

## Appendix A3.2 Summary of study findings included in the rating for the progressing in school domain<sup>1</sup>

Outcome measure	Study sample	Sample size (students)	Author's findings from the study		WWC calculations			
			Mean outcome (standard deviation <sup>2</sup> )		Mean difference <sup>3</sup> (High School Redirection – comparison)	Effect size <sup>4</sup>	Statistical significance <sup>5</sup> (at $\alpha = 0.05$ )	Improvement index <sup>6</sup>
			High School Redirection group	Comparison group				
Dynarski and Wood, 1997 (randomized controlled trial with control group crossover) <sup>7</sup> —Stockton								
Total credits earned at end of year 4	Cohort 1	374	10.5 (7.6)	8.5 (7.4)	2.0	0.26	Statistically significant	+10
Average <sup>8</sup> for progressing in school (Dynarski and Wood, 1997)—Stockton						0.26	Statistically significant	+10
Dynarski and Wood, 1997 (randomized controlled trial) <sup>7</sup> —Wichita								
Total credits earned at end of year 4	Cohorts 1 and 2	358	7.6 (6.9)	8.2 (6.8)	−0.6	−0.09	ns	−3
Average <sup>8</sup> for progressing in school (Dynarski and Wood, 1997)—Wichita						−0.09	ns	−3
Domain average <sup>8</sup> for progressing in school						0.09	na	+4

ns = not statistically significant

na = not applicable

1. This appendix reports findings considered for the effectiveness rating and the average improvement index in the progressing in school domain.
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 total credits earned were not included in Dynarski and Wood (1997), but were reported to the WWC by the study's authors.
3. Positive differences and effect sizes favor the intervention group; negative differences and effect sizes favor the comparison group. Means from Dynarski and Wood (1997) 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 the groups is a result of chance rather than a real difference between the groups. Although the study authors originally reported statistical significance using a  $p < 0.10$  threshold, all analyses were redone by the WWC to test for statistical significance using a  $p < 0.05$  threshold.
6. The improvement index represents the difference between the percentile rank of the average student in the intervention condition and 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](#). See [Technical Details of WWC-Conducted Computations](#) for the formulas the WWC used to calculate statistical significance. In the case of the Dynarski and Wood (1997) Stockton and Wichita 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.

## Appendix A3.3 Summary of study findings included in the rating for the completing school domain<sup>1</sup>

Outcome measure	Study sample	Sample size (students)	Author’s findings from the study		WWC calculations			
			Mean outcome		Mean difference <sup>2</sup> (High School Redirection – comparison)	Effect size <sup>3</sup>	Statistical significance <sup>4</sup> (at $\alpha = 0.05$ )	Improvement index <sup>5</sup>
			High School Redirection group	Comparison group				
Dynarski and Wood, 1997 (randomized controlled trial with control group crossover) <sup>6</sup> —Stockton								
Earned a high school diploma or GED at end of year 3 (%)	Cohort 1	298	40	32	8	0.21	ns	+8
Average <sup>7</sup> for completing school (Dynarski and Wood, 1997)—Stockton						0.21	ns	+8
Dynarski and Wood, 1997 (randomized controlled trial) <sup>6</sup> —Wichita								
Earned a high school diploma or GED at end of year 2 (%)	Cohorts 1 and 2	310	29	30	–1	–0.03	ns	–1
Average <sup>7</sup> for completing school (Dynarski and Wood, 1997)—Wichita						–0.03	ns	–1
Dynarski and Wood, 1997 (randomized controlled trial) <sup>6</sup> —Cincinnati								
Earned a high school diploma or GED at end of year 2 (%)	Cohorts 1 and 2	902	7	6	1	0.10	ns	+4
Average <sup>7</sup> for completing school (Dynarski and Wood, 1997)—Cincinnati						0.10	ns	+4
Domain average <sup>7</sup> for completing school						0.09	na	+4

ns = not statistically significant

na = not applicable

1. This appendix reports findings considered for the effectiveness rating and the average improvement index for the completing school domain. Appendix A4 reports separate impacts of *High School Redirection* on earning a high school diploma and earning a GED certificate.
2. Positive differences and effect sizes favor the intervention group; negative differences and effect sizes favor the comparison group. Means from Dynarski and Wood (1997) are estimated using regression models that control for baseline characteristics.
3. Effect sizes for dichotomous variables were computed using the Cox Index. 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 the groups is a result of chance rather than a real difference between the groups. Although the study authors originally reported statistical significance using a  $p < 0.10$  threshold, all analyses were redone by the WWC to test for statistical significance using a  $p < 0.05$  threshold.
5. The improvement index represents the difference between the percentile rank of the average student in the intervention condition and 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](#). See [Technical Details of WWC-Conducted Computations](#) for the formulas the WWC used to calculate statistical significance. In the case of the Dynarski and Wood (1997) Stockton, Wichita, and Cincinnati 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.

## Appendix A4 Summary of item-level findings for the completing school domain<sup>1</sup>

Outcome measure	Study sample	Sample size (students)	Author’s findings from the study		WWC calculations			
			Mean outcome		Mean difference <sup>2</sup> ( <i>High School Redirection</i> – comparison)	Effect size <sup>3</sup>	Statistical significance <sup>4</sup> (at $\alpha$ = 0.05)	Improvement index <sup>5</sup>
			<i>High School Redirection</i> group	Comparison group				
Dynarski and Wood, 1997 (randomized controlled trial with control group crossover)—Stockton <sup>6</sup>								
Earned a high school diploma at end of year 3 (%)	Cohort 1	298	20	15	5	0.21	ns	+8
Earned a GED certificate at end of year 3 (%)	Cohort 1	298	21	17	4	0.16	ns	+6
Dynarski and Wood, 1997 (randomized controlled trial)—Wichita <sup>6</sup>								
Earned a high school diploma at end of year 2 (%)	Cohorts 1 and 2	310	9	14	–5	–0.30	ns	–12
Earned a GED certificate at end of year 2 (%)	Cohorts 1 and 2	310	20	17	3	0.12	ns	+5
Dynarski and Wood, 1997 (randomized controlled trial)—Cincinnati <sup>6</sup>								
Earned a high school diploma at end of year 2 (%)	Cohorts 1 and 2	902	4	1	3	0.86	Statistically significant	+30
Earned a GED certificate at end of year 2 (%)	Cohorts 1 and 2	902	3	5	–2	–0.32	ns	–13

ns = not statistically significant

1. This appendix presents item-level findings for measures in the completing school domain. These include the separate effects of the intervention on high school diploma receipt and on GED certificate receipt. The intervention's combined effect on high school diploma and GED receipt was used for determining the effectiveness rating and is presented in Appendix A3.3.
2. Positive differences and effect sizes favor the intervention group; negative differences and effect sizes favor the comparison group. Means from Dynarski and Wood (1997) are estimated using regression models that control for baseline characteristics.
3. Effect sizes for dichotomous variables were computed using the Cox Index. 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 the groups is a result of chance rather than a real difference between the groups. Although the study authors originally reported statistical significance using a  $p < 0.10$  threshold, all analyses were redone by the WWC to test for statistical significance using a  $p < 0.05$  threshold.
5. The improvement index represents the difference between the percentile rank of the average student in the intervention condition and 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](#). See [Technical Details of WWC-Conducted Computations](#) for the formulas the WWC used to calculate statistical significance. In the case of the Dynarski and Wood (1997) Stockton, Wichita, and Cincinnati studies, no corrections for clustering or multiple comparisons were needed.



## Appendix A5.1 High School Redirection rating for the staying in school domain

The WWC rates an intervention's effects in a given outcome domain as positive, potentially positive, mixed, no discernible effects, potentially negative, or negative.<sup>1</sup>

For the outcome domain of staying in school, the WWC rated *High School Redirection* as having mixed effects. It did not meet the criteria for positive effects because only one of the three studies showed positive effects. It did not meet the criteria for potentially positive effects because more studies found indeterminate effects than found significant positive effects. The remaining ratings (no discernable effects, potentially negative effects, negative effects) were not considered because *High School Redirection* was assigned a higher applicable rating.

### Rating received

**Mixed effects:** Evidence of inconsistent effects as demonstrated through EITHER of the following criteria.

- Criterion 1: At least one study showing a statistically significant or substantively important *positive* effect, and at least one study showing a statistically significant or substantively important *negative* effect, but no more such studies than the number showing a statistically significant or substantively important *positive* effect.

**Not met.** No study found statistically significant or substantively important negative effects in this domain.

- Criterion 2: At least one study showing a statistically significant or substantively important effect, and more studies showing an *indeterminate* effect than showing a statistically significant or substantively important effect.

**Met.** One study found a statistically significant positive effect in this domain and two studies had indeterminate effects in this domain.

### 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 study found statistically significant positive effects in this domain.

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

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

**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.** One study found statistically significant and substantively important positive effects in this domain.

- 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.

**Not met.** Two studies showed indeterminate effects while only one showed statistically significant positive 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. See the [WWC Intervention Rating Scheme](#) for a complete description.

## Appendix A5.2 High School Redirection rating for the progressing in school domain

The WWC rates an intervention's effects in a given outcome domain as positive, potentially positive, mixed, no discernible effects, potentially negative, or negative.<sup>1</sup>

For the outcome domain of progressing in school, the WWC rated *High School Redirection* as having potentially positive effects. It did not meet the criteria for having positive effects because only one study found statistically significant or substantively important positive effects in this domain. The remaining ratings (mixed effects, no discernable effects, potentially negative effects, negative effects) were not considered because *High School Redirection* was assigned a higher 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.** One study found statistically significant and substantively important positive effects in this domain.

- 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 study found statistically significant or substantively important negative effects in this domain. One study showed statistically significant positive effects and another showed indeterminate effects.

### 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.** One study found statistically significant positive effects in this domain.

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

**Met.** No study 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. See the [WWC Intervention Rating Scheme](#) for a complete description.

## Appendix A5.3 High School Redirection rating for the completing school domain

The WWC rates an intervention's effects in a given outcome domain as positive, potentially positive, mixed, no discernible effects, potentially negative, or negative.<sup>1</sup>

For the outcome domain of completing school, the WWC rated *High School Redirection* as having no discernible effects. It did not meet the criteria for the other ratings (positive effects, potentially positive effects, mixed effects, potentially negative effects, negative effects) because no statistically significant or substantively important findings were found in this domain.

### Rating received

**No discernible effects:** No affirmative evidence of effects.

- Criterion 1: None of the studies shows a statistically significant or substantively important effect, either *positive* or *negative*.

**Met.** No study found statistically significant or substantively important effects in this domain.

### 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.** No study found statistically significant positive effects in this domain.

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

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

**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.

**Not met.** No study found statistically significant or substantively important positive effects in this domain.

- 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 study found statistically significant or substantively important negative effects in this domain.

**Mixed effects:** Evidence of inconsistent effects as demonstrated through EITHER of the following criteria.

- Criterion 1: At least one study showing a statistically significant or substantively important *positive* effect, and at least one study showing a statistically significant or substantively important *negative* effect, but no more such studies than the number showing a statistically significant or substantively important *positive* effect.

**Not met.** No study found statistically significant or substantively important effects, either positive or negative, in this domain.

- Criterion 2: At least one study showing a statistically significant or substantively important effect, and more studies showing an *indeterminate* effect than showing a statistically significant or substantively important effect.

**Not met.** No study found statistically significant or substantively important effects in this domain.

(continued)

### Appendix A5.3 High School Redirection rating for the completing school domain *(continued)*

**Potentially negative effects:** Evidence of a negative effect with no overriding contrary evidence

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

**Not met.** No study found statistically significant or substantively important negative effects in this domain.

- Criterion 2: No studies showing a statistically significant or substantively important *positive* effect, or more studies showing statistically significant or substantively important *negative* effects than showing statistically significant or substantively important *positive* effects.

**Met.** No study found statistically significant or substantively important positive effects in this domain.

**Negative effects:** Strong evidence of a negative effect with no overriding contrary evidence.

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

**Not met.** No study found statistically significant negative effects in this domain.

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

**Met.** No study found statistically significant or substantively important positive 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. See the [WWC Intervention Rating Scheme](#) for a complete description.

Appendix A6      Extent of evidence by domain

Outcome domain	Number of studies	Sample size		
		Schools	Students	Extent of evidence <sup>1</sup>
Staying in school	3	3	1,634	Moderate to large
Progressing in school	2	2	732	Moderate to large
Completing school	3	3	1,510	Moderate to large

na = not applicable/not studied

1. A rating of “moderate 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.”