



## EDUCATOR'S PRACTICE GUIDE


A set of recommendations to address challenges in classrooms and schools

WHAT WORKS CLEARINGHOUSE™

# Preventing Dropout in Secondary Schools



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 **NATIONAL CENTER** FOR  
EDUCATION EVALUATION  
AND REGIONAL ASSISTANCE  
Institute of Education Sciences

## About this practice guide

The Institute of Education Sciences (IES) publishes practice guides to provide educators with the best available evidence and expertise on current challenges in education. The What Works Clearinghouse (WWC) develops practice guides in conjunction with an expert panel, combining the panel's expertise with the findings of existing rigorous research to produce specific recommendations for addressing these challenges. The WWC and the panel rate the strength of the research evidence supporting each of their recommendations. See Appendix A for a full description of practice guides and Appendix D for a full list of the studies used to support the evidence rating for each recommendation.

The goal of this practice guide is to offer educators specific, evidence-based recommendations that address the challenges of preventing dropout in secondary schools. This guide synthesizes the best publicly available research and shares practices that are supported by evidence. It is intended to be practical and easy for teachers and school leaders to use.

The guide includes many examples in each recommendation to demonstrate the concepts discussed. Throughout the guide, examples, definitions, and other concepts supported by evidence are indicated by endnotes within the example title or content. For examples that are supported by studies that meet WWC design standards, the citation in the endnote is in **bold text**. Examples without specific citations were developed in conjunction with the expert panel based on their experience, expertise, and knowledge of the related literature. Practice guides published by IES are available on the WWC website at <https://whatworks.ed.gov>.

## How to use this guide

This guide is targeted to school and district administrators, as well as members of student-support teams including school counselors, social workers, psychologists, and teachers. It provides recommendations that can be implemented in conjunction with existing academic curricula and student-support services. No single recommendation is likely to prevent dropout entirely on its own, because each addresses different types of student needs and challenges. The panel believes that Recommendations 1, 2, and 3 complement one another and are most effective when implemented simultaneously in all types of schools. Recommendation 4 should be implemented primarily in schools with high dropout rates to facilitate implementation of the other three recommendations. It is important to note that Recommendation 4 might be more challenging to implement, as it could involve staffing and other structural changes in the school.

While the guide uses specific examples to illustrate how the recommendations can be implemented, there are a wide range of activities that could be used to implement the recommended practices. The type of activity may vary depending on school context, grade range, and other support available at the school. In addition, activities may vary depending on budget limitations. The panel did not explicitly consider financial costs of implementing the recommendations, but some of the recommended practices, such as hiring individuals to serve as advocates or planning and implementing small learning communities, may require expenditures.<sup>1</sup>

Practitioners in after-school or community-based programs may also be able to adapt some of the recommended practices to non-school settings, but the specific activities implemented in these types of settings might differ from those used during the school day.

Professional development providers, researchers, and state level administrators and policymakers can also use this guide. Professional development providers can use the guide to encourage the use of evidence-based practices or to prompt discussions about dropout prevention strategies in professional learning communities. Researchers may find opportunities to test the effectiveness of various approaches and explore gaps or variations in the dropout prevention literature. State level officials can use the guide to support or facilitate the recommended practices within districts, schools, and affiliated programs.

## Preventing Dropout in Secondary Schools

### September 2017

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The citation for this What Works Clearinghouse practice guide begins with the panel chair, followed by the names of the panelists and staff listed in alphabetical order.

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## Preventing Dropout in Secondary Schools

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# Introduction

## Introduction to the *Preventing Dropout in Secondary Schools Practice Guide*

**D**ropping out of secondary school is a persistent and serious problem.<sup>2</sup> More than half a million high school students stop attending school each year,<sup>3</sup> and students who do not complete high school face economic and social challenges throughout their lifetimes. They are more likely to be unemployed,<sup>4</sup> and those who are employed have lower earnings than high school graduates of the same age.<sup>5</sup> They are also more likely to have poor health, engage in criminal activity, and require public assistance.<sup>6</sup>

### Dropout: A Persistent Problem

- The percentage of 15- to 24-year-olds in grades 10–12 who dropped out of school in 2013 has fallen less than one percentage point in the last 30 years (to 4.7%).
- In 2013, the annual dropout rates for blacks and Hispanics were more than a percentage point higher than for whites (5.8% and 5.7%, respectively, compared to 4.3%).
- In 2013, students from low-income families dropped out at more than twice the rate of their peers from high-income families (7.2% compared to 3.0%).<sup>7</sup>

This practice guide provides school educators and administrators with four **evidence-based** recommendations for reducing dropout rates in middle and high schools and improving high school graduation rates. Each recommendation provides specific, actionable strategies; examples of how to implement the recommended practices in schools; advice on how to overcome potential obstacles; and a description of the supporting evidence.

The guide was developed in conjunction with a panel of dropout prevention researchers and practitioners with experience in researching, developing, and implementing dropout prevention strategies. It combines the panel's expertise with the findings of existing rigorous research.

See the Glossary for a full list of key terms used in this guide and their definitions. These terms are **bolded** when first introduced.

This practice guide updates *Dropout Prevention: A Practice Guide*, published in 2008.<sup>8</sup> This updated guide reflects the following:

- **Improvements in monitoring at-risk students.** There have been significant advances in using early warning indicators to identify students at risk for dropping out, to monitor students who require intervention, and to intervene to help students manage challenges and stay engaged in school.<sup>9</sup>
- **Recent evidence on dropout prevention practices, assessed using more rigorous standards.** This guide considers research published between January 1987 and January 2016, which covers an additional 9 years after the previous guide's literature search was conducted in 2007. Fifteen of the 25 studies used to support recommendations in this updated guide were published after 2007. In addition, studies in the previous guide—reviewed under What Works Clearinghouse (WWC) evidence standards, version 1.0—were reviewed again using the current, more rigorous WWC evidence standards, version 3.0.<sup>10</sup>



## Overarching themes

Three important themes emerge for preventing dropout in secondary schools:

- Continual monitoring of school and student data to identify when and where interventions should be applied prevents students from falling **off track for graduation**.
- Different students require different types of support to keep them engaged in school.
- A personalized learning environment facilitates stronger relationships between staff and students and engaging students in school.

### Dropout and Graduation

The ultimate objective of dropout prevention strategies is high school graduation, but there are critical intermediate steps on the path to graduation. Students must enroll in school, attend school, and progress in school before eventually earning a diploma.

A number of indicators are commonly used to monitor progress on this pathway for a given population at any point in time:

- **Dropout rate.** The percentage of students who are not enrolled in school and have not earned a regular or alternative diploma.
- **Graduation rate.** The percentage of students who have earned a regular diploma.
- **Completion rate.** The percentage of students who have earned a regular diploma or an alternative (for example, GED).<sup>11</sup>

## Overview of the recommendations

This practice guide includes four recommendations focused on identifying students at risk for dropping out, and addressing the challenges they face with both broad and individual interventions. Recommendations 1 and 2 suggest monitoring and intervening with different levels of intensity, depending on student needs. Recommendation 1 is preventative and proactive. Recommendation 2 focuses on serving students with persistent challenges who need more intensive support. Recommendations 3 and 4 provide guidance for helping students connect with their education and keeping them engaged in school. Each recommendation includes several how-to steps to help educators implement the recommended practices.

**Recommendation 1.** Monitor the progress of all students, and proactively intervene when students show early signs of attendance, behavior, or academic problems.

- **Step 1:** Organize and analyze data to identify students who miss school, have behavior problems, or are struggling in their courses.
- **Step 2:** Intervene with students who show early signs of falling off track.
- **Step 3:** If data show high rates of absenteeism, take steps to help students, parents, and school staff understand the importance of attending school daily.
- **Step 4:** Monitor progress and adjust interventions as needed.

**Recommendation 2.** Provide intensive, individualized support to students who have fallen off track and face significant challenges to success.

- **Step 1:** For each student identified as needing individualized support, assign a single person to be the student's primary advocate.

- **Step 2:** Develop a menu of support options that advocates can use to help students.
- **Step 3:** Support advocates with ongoing professional learning opportunities and tools for tracking their work.

**Recommendation 3.** Engage students by offering curricula and programs that connect schoolwork with college and career success and that improve students' capacity to manage challenges in and out of school.

- **Step 1:** Directly connect schoolwork to students' options after high school.
- **Step 2:** Provide curricula and programs that help students build supportive relationships and teach students how to manage challenges.
- **Step 3:** Regularly assess student engagement to identify areas for improvement, and target interventions to students who are not meaningfully engaged.

**Recommendation 4.** For schools with many at-risk students, create small, personalized communities to facilitate monitoring and support.

- **Step 1:** Decide whether the small communities will serve a single grade or multiple grades.
- **Step 2:** Create teams of teachers that share common groups of students.
- **Step 3:** Identify a theme to help build a strong sense of identity and community and to improve student engagement.
- **Step 4:** Develop a schedule that provides common planning time and ample opportunities for staff to monitor and support students.

### Summary of supporting evidence

Practices recommended in this guide are examined in 25 studies that meet WWC group design or pilot regression discontinuity standards.<sup>12</sup> These studies were identified through a thorough literature search and screened

for relevance according to eligibility criteria described in the practice guide protocol.<sup>13</sup> Studies were classified as having a positive or negative effect on student outcomes if the findings were either statistically significant (unlikely to occur by chance) or substantively important (large enough to be practically significant).

#### Study Eligibility Criteria

*For more information, see the review protocol.*

**Time frame:** Published between January 1987 and January 2016; earlier or later work was reviewed if recommended by the panel.

**Location:** The United States, its territories, or tribal entities; or in Canada.

**Sample requirements:** Students currently enrolled in secondary schools in grades 6–12.

Dropout prevention efforts are often multifaceted, and many studies examined interventions with several components. In these programs, some practices are often related to multiple recommendations in the guide, while other practices might not be recommended in the guide. Studies of these interventions typically cannot identify whether the effects of the intervention are due to one of the practices within the intervention or all of the practices implemented together. Nearly all the studies used to support Recommendations 1 and 4 examined interventions that included components related to other recommendations or components unrelated to any recommendation. However, Recommendations 2 and 3 are each supported by multiple studies that provide a direct test of the recommended practices, so there is stronger evidence of the effectiveness of those practices.

The studies examined interventions for students who were currently enrolled in secondary schools (middle and high schools) and who were at risk for dropping out or attended schools with large numbers of

at-risk students. Thirteen studies examined interventions delivered to at-risk subgroups of students within a school,<sup>14</sup> and one study examined an intervention delivered to all Latino students within a school.<sup>15</sup> Nine studies examined interventions delivered to all students in a grade or school, regardless of individual students' risk for dropping out.<sup>16</sup> In these studies, the sample schools serve primarily at-risk students. The final two studies examined alternative schools specifically designed for at-risk students.<sup>17</sup>

### Levels of Evidence

*For more information, see Appendix A.*

The **level of evidence** assigned to each recommendation indicates the strength of the evidence for the effect of the practices on students staying in, progressing in, and graduating from school.

**Strong level of evidence:** There is consistent evidence that the practices improve student outcomes for a diverse population of students.

**Moderate level of evidence:** There is some evidence that the practices improve student outcomes, but there may be ambiguity about whether that improvement is the direct result of the practices or whether the findings can be replicated with a diverse population of students.

**Minimal level of evidence:** There is at least one study that meets WWC group design standards and demonstrates that the practices improve student outcomes. However, the panel cannot point to a body of evidence that demonstrates the practices' positive effects. This may be because it has not been studied, it is difficult to study with a rigorous design, or there is weak or conflicting evidence of effectiveness.

Studies supporting the recommendations examined three key categories of outcomes (or **outcome domains**) related to dropout

prevention: (1) **staying in school**, (2) **progressing in school**, and (3) **graduating school**. The guide describes effects that the recommended practices have on all three outcome domains, but it highlights effects on graduation, when this outcome is reported and meets WWC standards. Although educators and administrators need to understand which practices have been shown to both keep students in school and eventually improve graduation outcomes, high school graduation is the central outcome of dropout prevention efforts. (For more information about outcomes, see Appendix D.)

Studies showed that practices in all four recommendations improved outcomes in the staying in school and graduating school domains. The studies consistently found that the recommended practices had positive effects on students' graduation. Most studies examining outcomes in the staying in school domain found positive effects, although some studies supporting each recommendation found indeterminate effects on staying in school. All recommendations include a study with indeterminate effects on progressing in school, though Recommendations 1, 2, and 3 also include a study with positive effects on progressing in school.

The panel and practice guide staff assigned a level of evidence to each recommendation based on an assessment of the relevant evidence supporting each recommendation. All recommendations must be supported by at least a minimal level of evidence to be included in the guide; practice guides do not recommend practices with no evidence. The level of evidence is assigned to the recommendation, and steps and examples within the recommendations are drawn from evidence as well as panel expertise. The steps and examples are intended to make the recommendations more actionable for practitioners, but there is not necessarily evidence (that meets WWC design standards) directly testing and supporting each step and example. Throughout the guide, steps and examples supported by evidence are indicated by endnotes (citations are bolded

for studies that meet WWC design standards). Steps and examples without citations were developed in conjunction with the panel based on their experience and knowledge of the related literature.

Table 1 shows the level-of-evidence rating for each recommendation as determined by WWC criteria outlined in Table A.1 in Appendix A. (Appendix D presents more information on the body of evidence supporting each recommendation.)

**Table 1. Recommendations and corresponding levels of evidence**

| Recommendation   | Levels of Evidence |                   |                 |
|--|--------------------|-------------------|-----------------|
|  | Minimal Evidence   | Moderate Evidence | Strong Evidence |
| 1. Monitor the progress of all students, and proactively intervene when students show early signs of attendance, behavior, or academic problems.   | ◆                  |                   |                 |
| 2. Provide intensive, individualized support to students who have fallen off track and face significant challenges to success.   |                    | ◆                 |                 |
| 3. Engage students by offering curricula and programs that connect schoolwork with college and career success and that improve students' capacity to manage challenges in and out of school. |                    |                   | ◆               |
| 4. For schools with many at-risk students, create small, personalized communities to facilitate monitoring and support.  |                    | ◆                 |                 |

## How to use this guide

This guide is targeted to school and district administrators, as well as members of student-support teams including school counselors, social workers, psychologists, and teachers. It provides recommendations that can be implemented in conjunction with existing academic curricula and student-support services. No single recommendation is likely to prevent dropout entirely on its own, because each addresses different types of student needs and challenges. The panel believes that Recommendations 1, 2, and 3 complement each other and are most effective when implemented simultaneously in all types of schools. Recommendation 4 should be implemented primarily in schools with high dropout rates to facilitate implementation of the other three recommendations. It is important to note that Recommendation 4 might be more challenging to implement, as it could involve staffing and other structural changes in the school.

While the guide uses specific examples to illustrate how the recommendations can be implemented, there are a wide range of activities that could be used to implement the recommended practices. The type of activity may vary depending on school context, grade range, and other support available at the school. In addition, activities may vary depending on budget limitations. The panel did not explicitly consider financial costs of implementing the recommendations, but some of the recommended practices, such as hiring individuals to serve as advocates or planning and implementing small learning communities, may require expenditures.<sup>18</sup>

Practitioners in after-school or community-based programs may also be able to adapt some of the recommended practices to non-school settings, but the specific activities implemented in these types of settings might differ from those used during the school day.

Professional development providers, researchers, and state-level administrators and policy-makers can also use this guide. Professional development providers can use the guide to encourage the use of evidence-based practices or to prompt discussions about dropout prevention strategies in professional learning communities. Researchers may find opportunities to test the effectiveness of various approaches and explore gaps or variations in the dropout prevention literature. State-level officials can use the guide to support or facilitate the recommended practices within districts, schools, and affiliated programs.

## Alignment with the previous practice guide

The 2008 *Dropout Prevention: A Practice Guide*<sup>19</sup> had six recommendations, with each recommendation categorized as involving diagnostic

practices, targeted interventions, or school-wide interventions. This updated guide includes four recommendations that fall into the same broad categories as the 2008 guide’s recommendations, but the updated recommendations are based on a more recent body of evidence and are aligned with technologies and practices used in schools today. Unlike the 2008 guide, some of the updated recommendations include both targeted and schoolwide approaches, so that educators can offer support to all students while providing more intensive interventions for those who need it. Table 2 shows the relationship between this guide’s recommendations and those from the previous guide. The left column lists the recommendations in the current practice guide, and the right column lists the recommendation from the previous practice guide from 2008. The center column explains how they overlap.

**Table 2. Relationship between recommendations in dropout prevention practice guides**

| <i>Preventing Dropout in Secondary Schools (2017)</i>   | Alignment Between Guides  | <i>Dropout Prevention: A Practice Guide (2008)</i>   |
|---|---|--|
| <p><b>Recommendation 1.</b> Monitor the progress of all students, and proactively intervene when students show early signs of attendance, behavior, or academic problems.</p> | <ul style="list-style-type: none"> <li>▪ Recommendation 1 in the updated guide captures many of the ideas addressed in Recommendation 1 in the former guide, but expands those ideas to include proactive interventions to help students who show early signs of being off track.</li> <li>▪ Recognizing that student data systems have improved since the former guide, Recommendation 1 in the updated guide provides information on specific data schools should use and how to organize data to identify students showing signs of falling off track.</li> <li>▪ Recommendation 1 in the updated guide includes a stronger focus on attendance, which recent evidence indicates is especially important for dropout prevention.</li> <li>▪ Embedded in Recommendation 1 in the updated guide are components of Recommendation 3 in the former guide: early signs of falling off track academically are used to place students in preventative interventions designed to reduce course failure.</li> </ul> | <p><b>Former Recommendation 1.</b> Utilize data systems that support a realistic diagnosis of the number of students who drop out and that help identify individual students at high risk of dropping out.</p> <p><b>Former Recommendation 3.</b> Provide academic support and enrichment to improve academic performance.</p> |
| <p><b>Recommendation 2.</b> Provide intensive, individualized supports to students who have fallen off track and face significant challenges to success.</p>                  | <ul style="list-style-type: none"> <li>▪ Like Recommendation 2 in the former guide, Recommendation 2 in the updated guide involves using adult advocates for more intensive monitoring and personalized interventions.</li> <li>▪ The updated Recommendation 2 goes further by encouraging schools to support advocates with a menu of strategies to use with students, as well as training, mentoring, and data-tracking systems.</li> <li>▪ The updated Recommendation 2 also improves upon Recommendation 3 in the former guide by providing additional guidance on delivering more intensive academic services to students who have already failed courses.</li> </ul>  | <p><b>Former Recommendation 2.</b> Assign adult advocates to students at risk of dropping out.</p>   |

*(continued)*

**Table 2. Relationship between recommendations in dropout prevention practice guides *(continued)***

| <b><i>Preventing Dropout in Secondary Schools (2017)</i></b>  | <b><i>Alignment Between Guides</i></b>   | <b><i>Dropout Prevention: A Practice Guide (2008)</i></b>  |
|---|--|--|
| <p><b>Recommendation 3.</b> Engage students by offering curricula and programs that connect schoolwork with college and career success and that improve students' capacity to manage challenges in and out of school.</p> | <ul style="list-style-type: none"> <li>▪ Recommendation 3 in the updated guide includes components of Recommendations 4 and 6 in the former guide. It recommends a multifaceted approach to facilitating student engagement in school by bringing together the problem-solving and goal-setting activities in former Recommendation 4 with the college- and career-focused activities in former Recommendation 6.</li> </ul> | <p><b>Former Recommendation 4.</b> Implement programs to improve students' classroom behavior and social skills.</p> <p><b>Former Recommendation 6.</b> Provide rigorous and relevant instruction to better engage students in learning and provide the skills needed to graduate and to serve them after they leave school.</p> |
| <p><b>Recommendation 4.</b> For schools with many at-risk students, create small, personalized communities to facilitate monitoring and support.</p>  | <ul style="list-style-type: none"> <li>▪ Recommendation 4 in the updated guide is related to Recommendation 5 in the former guide. It provides guidance for creating personalized learning communities. It expands on the recommendation in the former guide by including steps for strengthening the community with a theme, a master schedule, and additional teacher planning time.</li> </ul>                            | <p><b>Former Recommendation 5.</b> Personalize the learning environment and instructional process.</p>   |

# Recommendation 1



## Monitor the progress of all students, and proactively intervene when students show early signs of attendance, behavior, or academic problems.

*Students typically decide to drop out of high school after an accumulation of setbacks and struggles over several years.<sup>20</sup> Three key indicators—(1) attendance, (2) behavior, and (3) course performance—are reliable predictors of which students are at risk for dropping out.<sup>21</sup> By continually monitoring students' attendance, behavior, and grades, schools can intervene at the first signs of trouble, before students need intensive support to graduate on time.<sup>22</sup>*

The panel recommends that schools monitor data for all students and intervene when students show signs of being at risk as a preventative measure. Schools may be inclined to focus their resources on students already off track for graduation, but this approach can overlook students who are just starting to fall off track. By monitoring all students, schools can intervene proactively, reducing the effort and resources needed to help students graduate on time, and increasing the likelihood these students will graduate.<sup>23</sup> Regular monitoring of data also enables school staff to address school-level

issues contributing to dropout rates, such as courses with high failure rates, low attendance during particular periods, or suspension policies that increase absences.<sup>24</sup>

### Summary of evidence: **Minimal Evidence**

Six studies contributed to the level of evidence for this recommendation (see Appendix D for more information).<sup>25</sup> Five studies meet WWC group design standards without reservations, which is the highest possible rating for group design studies and indicates the highest degree of confidence that the observed

## Recommendation 1 (continued)

effects were caused by the interventions.<sup>26</sup> One study meets WWC group design standards with reservations, which indicates a lower degree of confidence that the observed effects were caused by the interventions.<sup>27</sup> Two studies found that the recommended practices improved student outcomes in at least one of the three outcome domains related to dropout prevention.<sup>28</sup> These two studies examined outcomes in the graduating school domain—which is weighted more heavily than other outcome domains in determining the level of evidence<sup>29</sup>—and found positive effects.<sup>30</sup> However, neither of

the two studies that demonstrated improved student outcomes evaluated an intervention that included all four steps of the recommendation without any other components, so there is no direct test of the full recommendation. In addition, one study that found positive effects was conducted in Chicago Public Schools and the other in North Carolina, limiting generalizability beyond students with those demographics.<sup>31</sup> The absence of a direct test of the recommendation and the limited generalizability of the studies indicate a minimal level of evidence.

### Steps to carry out the recommendation

#### 1. Organize and analyze data to identify students who miss school, have behavior problems, or are struggling in their courses.

Use data routinely collected in school as a starting point for monitoring the three key “ABC” early warning indicators:<sup>32</sup>

- **A**ttendance (total, unexcused, and excused)
- **B**ehavior (suspensions, office referrals)
- **C**ourse grades (including intermediate outcomes such as failing tests or missing assignments)

These three ABC indicators have consistently been shown to be reliable predictors of which students are at risk for dropping out.<sup>33</sup> While issues such as pregnancy, homelessness, problems at home, and bullying at school are risk factors, their impact is often captured through the three ABC indicators.

Schools are encouraged to use historical student ABC data (i.e., data from previous years) to establish benchmarks that indicate when their students are at risk for falling off track for graduation and need intervention. For example, based on attendance patterns, it may be that a lower threshold such as 85% attendance or higher threshold such as

Students who are **off track for graduation** have low attendance rates, behavioral problems, or academic problems that put them at risk of dropping out.

95% attendance may be needed.<sup>34</sup> Similar decisions will be needed for establishing thresholds for behavior problems and course grades. Example 1.1 provides examples of early warning indicator thresholds from three school districts for identifying students in middle school grades who are slipping off track and need intervention. Each district has a different context and employs a different approach to early warning indicators to suit its particular needs. Schools can use the thresholds in Example 1.1 as a starting point for defining their own early warning indicator thresholds.

Note that a less stringent threshold translates to identifying more students as being at risk and may include students who may not eventually be at risk for being off track.<sup>35</sup> One advantage of the higher threshold, however, is that students are identified early on, and less effort



## EXAMPLE 1.1

**Sample district early warning indicator thresholds for middle school grades<sup>36</sup>**

|                                     | District 1 <sup>37</sup>  | District 2                      | District 3  |
|-------------------------------------|---|---------------------------------|---|
| <b>Attendance indicator</b>         | Daily attendance of 90% or less   | Daily attendance of 80% or less | Daily attendance of 95% or less                   |
| <b>Behavior indicator</b>           | Three or more days of suspension  | Repeated behavior problems      | NA <sup>38</sup>                                  |
| <b>Course performance indicator</b> | Failure in English, or math, or both, and/or a failing average for English, math, science, and social studies | Failing English or math         | A semester grade of D or lower in English or math |

and fewer cost-intensive efforts will likely be needed. A lower threshold will mean identifying fewer students initially. But it could be that by the time the student is identified, the problems have compounded or have become entrenched, and more intensive services are needed.

Schools can access ABC indicators from their school data systems and regularly update them as part of everyday operations. Therefore, school staff need not wait until the end of a marking period to discover if a student is struggling. Some schools may already have access through their state or district to an online **early warning system**, such as the one shown in Example 1.2, which provides built-in reports to help monitor student progress.<sup>39</sup> Schools can also create their own organizing and monitoring tools using simple spreadsheets. Schools can upload data regularly collected in gradebooks and attendance systems into a spreadsheet, where they can then summarize and sort the data to identify which students need additional support.

Organize the data so that it is easy for staff to flag which students are showing early warning signs of falling off track. To identify individual students who are showing early warning signs, summarize each student's current and past attendance, behavior, and course performance data. The spreadsheet can be formatted so that values outside of a specified range are automatically highlighted, which can be used

to identify attendance, behavior, or grades that exceed the early warning indicator thresholds (Example 1.3).

Also, examine ABC indicators at the school level to identify patterns and trends that might be related to dropping out. Create summaries of ABC indicators by subject, class, or specific groups of students. A sample summary of ABC indicators is provided in Example 1.4. This type of summary can be used for school-level indicators, or to summarize ABC indicators for a group of students. For instance, if Example 1.4 summarized ABC indicators for the first period class, school leaders may notice that the number of students with more than three absences in their first period grew from six in September to 20 in October. This could indicate a problem with students arriving at school on time. Alternatively, Example 1.4 might summarize ABC indicators for a specific group of students, such as 9th-grade male students. In this case, the increase in absences may be a warning that these students are disengaging from school. Examining ABC indicators for groups of students can save resources compared to individual monitoring, and it can allow schools to prioritize specific groups, classes, or periods.

School staff working on dropout issues at their schools should meet regularly—as often as weekly—to review students' attendance rates, disciplinary referrals, and course

# Recommendation 1 (continued)

## EXAMPLE 1.2

### Sample early warning system, and other tools for organizing data

**Early warning system (EWS) online tool:** Data can also be organized using an EWS tool. The advantage of such a tool is that it allows for multiple users with different access levels to sort and filter data in sophisticated ways, generate various reports, and monitor student progress, all using a single platform.

#### Example of an EWS tool

The screenshot shows a web-based EWS tool interface. At the top, there are several filter dropdown menus: Year (2016-17), Grading Period (Quarter 3), Grade (9), Disability (No), Disadvantaged (Yes), ELL (No), Gender (Male), Race/Ethnicity (White), and Risk Incoming (High). Below these is a green 'Filter' button. Underneath are five tabs: Demographics, Attendance Status, Behavior, Course Performance (which is selected and highlighted), and Interventions. Below the tabs is a table titled 'Course Performance' with the following data:

| Student ID | First name | Last name | Grading period | Course Code | Course Name       | Course Grade |
|------------|------------|-----------|----------------|-------------|-------------------|--------------|
| 123456     | James      | Snipes    | Quarter 3      | ALG1        | Algebra 1         | C            |
| 789101     | Roger      | Palmer    | Quarter 3      | ALG1        | Algebra 1         | D            |
| 111213     | Dante      | Williams  | Quarter 3      | ENG9        | 9th grade English | F            |
| 141516     | Martin     | Taylor    | Quarter 3      | ENG9        | 9th grade English | B            |
| 171819     | Jimmie     | Vaughan   | Quarter 3      | ENG9        | 9th grade English | D            |

For additional information on EWS tools or for technical assistance, visit *The Early Warning Systems Learning Series* website at <https://ies.ed.gov/ncee/edlabs/projects/ews.asp>.

**Spreadsheet software (e.g., Microsoft Excel or Google Sheets):** For schools with no student-information systems in place (e.g., district early warning system or other electronic platforms for organizing, storing, and viewing student data), a good starting point is a spreadsheet. This software allows for inputting and sorting of data, which is the first step in uncovering patterns. Schools can also consolidate their electronic gradebook/attendance data using spreadsheet software.

## EXAMPLE 1.3

### Sample template for organizing data at the student level

| Student ID | Last name | First name | Grading period | Current absences | Prior period absences | Current behavior incidents | Prior behavior incidents | Current GPA | Prior Ds or Fs |
|------------|-----------|------------|----------------|------------------|-----------------------|----------------------------|--------------------------|-------------|----------------|
| 102201     | Robert    | Sarah      | 2              | 0                | 0                     | 0                          | 0                        | 3.1         | —              |
| 104451     | Smith     | Kyla       | 2              | 0                | 0                     | 0                          | 0                        | 2.5         | —              |
| 245230     | Hassan    | Bob        | 2              | 8                | 0                     | 0                          | 0                        | 1.6         | 2              |
| 216222     | D'Shay    | Matt       | 2              | 2                | 2                     | 2                          | 0                        | 2.4         | 1              |

## EXAMPLE 1.4

### Sample template for organizing data at the school level

| Month         | Absence counts |    |    |    |    | Office referral counts |   |   |   |    | Grade counts |     |     |    |    |
|---------------|----------------|----|----|----|----|------------------------|---|---|---|----|--------------|-----|-----|----|----|
|               | 0              | 1  | 2  | 3  | >3 | 0                      | 1 | 2 | 3 | >3 | A            | B   | C   | D  | F  |
| August        | 295            | 4  | 1  | 0  | 0  | 0                      | 2 | 0 | 0 | 0  | —            | —   | —   | —  | —  |
| September     | 229            | 12 | 48 | 5  | 6  | 0                      | 1 | 2 | 0 | 0  | 35           | 100 | 140 | 25 | 10 |
| October       | 202            | 31 | 32 | 15 | 20 | 0                      | 0 | 3 | 0 | 1  | 40           | 95  | 135 | 30 | 10 |
| Total to date | 726            | 47 | 81 | 20 | 26 | 0                      | 3 | 5 | 0 | 1  | 75           | 195 | 275 | 55 | 20 |

performance, and to plan interventions for students needing support. If a school has a small number of students whose data show early warning signs of falling off track, then existing student support teams might take on the additional tasks of monitoring the data and planning interventions. However, schools with large numbers of at-risk students might need to create a dedicated team—or teams for each grade level—consisting of teachers, counselors, and school leaders, to address dropout issues in their schools.<sup>40</sup> Additional strategies for schools with many at-risk students are discussed in Recommendation 4.

In addition to monitoring students during the school year, review ABC indicators from

the previous school year to identify students who may need outreach over the summer or additional support at the beginning of the school year to prevent them from slipping off track. Pay particular attention to student performance during transition years, such as 6th grade and 9th grade, to see if there is a decline in student performance during those years. Students often slip off track during transition years, even if they previously performed well in school. A schoolwide decline in performance during transition years may indicate that all 6th- or 9th-grade students need additional support, such as a mentoring program, additional academic help, or closer monitoring of attendance.<sup>41</sup>

## 2. Intervene with students who show early signs of falling off track.

Use the data collected in Step 1 to identify students who are in need of early intervention to ensure they remain on track for graduation. Often, the path to dropping out starts slowly, with one failed course or a few absences. Without early intervention, the challenges students face can compound, requiring more intensive support (described in Recommendation 2). These early interventions can occur for individual students, groups of students, or the entire school.

Early interventions might be academic in nature. For instance, additional academic support when a student has failed a unit test or is not turning in homework assignments may

improve their performance well before they receive their first D or F grade in a course at the end of the grading period. For example, consider John, an 11th-grader, who has not been turning in his assignments for 2 weeks and has failed his weekly test. Ms. Robertson, his teacher, checks in with him immediately, rather than waiting until the end of the semester, and realizes that he is having difficulty with the subject matter. She offers assistance during lunch breaks and refers John to the homework club for additional help with assignments.

School staff can use gradebook data shortly before the end of each marking period to identify students whose class averages are

## Recommendation 1 *(continued)*

on the borderline for failure (either high Fs or low Ds) for simple and non-intrusive interventions, before their grade is set. For each of these students, teams could identify a teacher that has good rapport with the student to have a one-on-one conversation about how they can get their grade up before the end of the marking period.

Other students may need social and emotional interventions. For example, consider this early intervention that was implemented to help Mikela, a 7th-grader, who was sent to the office multiple times in the last 2 weeks. Arin, the school counselor, spoke to Mikela's teachers and found out that Mikela was consistently disrupting class by talking to her friends and yelling at her teachers when she was asked to stay on task. Arin spoke to Mikela about joining an anger-management group that was being offered at school once a week to learn ways to react to her teachers more productively (see Recommendation 3 for more information on social and emotional interventions).

Before planning any intervention, informally check in with students about changes in attendance, behavior, or grades to discover the cause of the problem. These types of informal probes are quick and not time-consuming, and yet allow for gathering of information that will help in determining a course of action to keep students on track. Discuss whether there are any issues (e.g., pregnancy, homelessness, problems at home, bullying at school) that are affecting the student's engagement with school.

These informal checks might reveal, for example, that Andrew is missing school because the car has broken down and he does not have a ride to get to school. In such instances,

Andrew's parents might need help in setting up a network of supports to rely on for emergencies. School staff should also discuss with Andrew and his parents the importance of attendance for graduating from high school.

Based on the data patterns, interventions may be needed for a group of students. The data might show, for example, several students entering high school with Ds and Fs in their 8th-grade math classes. Given the importance of succeeding academically in 9th grade<sup>42</sup>—a key transition year—the school could provide a double-dose math class for struggling students.<sup>43</sup> The additional math class can help students grasp the foundational material necessary for an upcoming lesson, review difficult areas a second time, and provide additional practice problems to reinforce learning. It is important to make sure the double-dose classes are staffed with experienced teachers who have shown success engaging students in the past.<sup>44</sup>

The panel recommends also reviewing schoolwide data to assess needs for intervention at the school level. For example, if data show that high rates of suspension are contributing to excessive absences for some students, schools may introduce new disciplinary policies or behavioral interventions. A school might implement a schoolwide alternative to suspensions, such as positive behavior intervention and supports (PBIS), mediation, in-school supervision, or restorative programs. By reducing absences and consequent missed instruction time and disengagement from school, such alternatives can prevent behavior problems from exacerbating the risk of students dropping out of school.<sup>45</sup>

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### 3. If data show high rates of absenteeism, take steps to help students, parents, and school staff understand the importance of attending school daily.

Attendance is an especially important indicator of whether students are at risk of dropping out; therefore, the panel recommends

that schools pay particular attention to attendance rates. When students are chronically absent (generally defined as 10% of the

## Recommendation 1 (continued)

school year, which is 18 days out of a typical 180-day school year), they are likely to fall behind in their classwork and disengage as lessons make less sense to them or there are large numbers of assignments to make up.<sup>46</sup> The panel believes that it is important to set clear expectations for attendance and embed it in the school culture. If schoolwide data show low attendance rates for many students, initiate programs that reach all students, staff, and parents to emphasize the importance of attendance for graduation.

For instance, the data might show that many students in a high school are not attending first period classes. In response, school staff and families could work together to develop strategies for getting students to school on

time, such as emergency carpools or wake-up phone reminders. To address high absenteeism rates more broadly, the school principal might hold several parent–student nights to communicate the importance of attending school and its relationship with doing well academically. The principal can share an infographic similar to the one shown in Example 1.5 and discuss with parents and students the relationship between attendance, grades, and graduation in middle and high school.<sup>47</sup> At the meeting, the principal can also distribute “fridge stickers,” as shown in Example 1.6, to highlight the attendance rates and grades needed to graduate from high school and attend college. The panel believes that these types of graphical displays are effective ways to communicate expectations to students and parents.

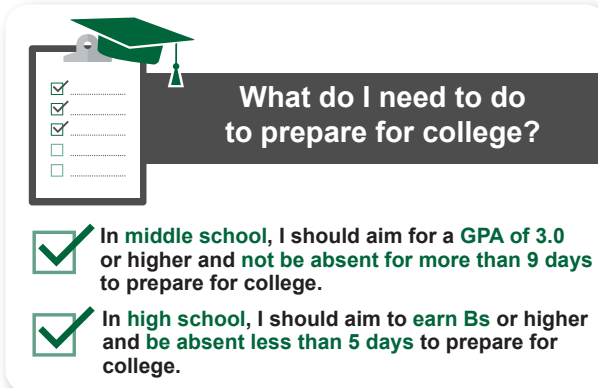
### EXAMPLE 1.5

#### Sample infographic highlighting the importance of attendance and grades for graduation<sup>48</sup>

| What are YOUR chances of being on track to graduation when you get to high school? |              | 8th grade GPA |         |         |         |
|--|--------------|---------------|---------|---------|---------|
|  |              | 0.0–1.0       | 1.0–2.0 | 2.0–3.0 | 3.0–4.0 |
| 8th-grade absences   | Less than 9  | 41%           | 55%     | 76%     | 93%     |
|  | 9 to 17      | 26%           | 44%     | 63%     | 84%     |
|  | 18 to 36     | 17%           | 33%     | 45%     | 70%     |
|  | More than 36 | 12%           | 18%     | 26%     |         |

### EXAMPLE 1.6

#### Sample “fridge sticker” highlighting the grades and attendance needed to prepare for college<sup>49</sup>



**What do I need to do to prepare for college?**

- In middle school, I should aim for a GPA of 3.0 or higher and not be absent for more than 9 days to prepare for college.
- In high school, I should aim to earn Bs or higher and be absent less than 5 days to prepare for college.

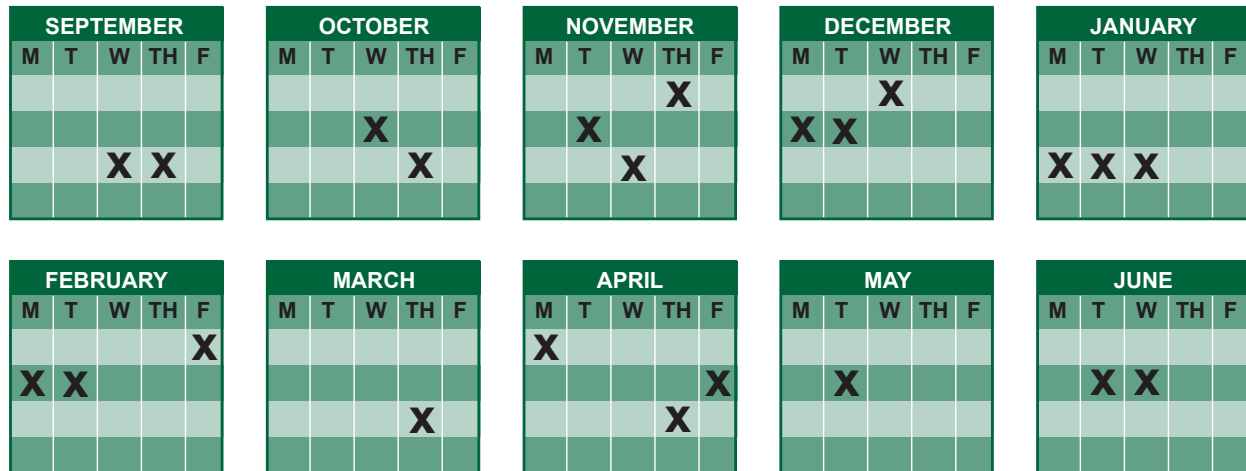
## Recommendation 1 *(continued)*

Parents, students, and even school staff may not realize that being absent a day or two periodically can add up to chronic

absenteeism. Use visuals such as Example 1.7 to show how absences add up across a school year.

### EXAMPLE 1.7

#### Sample visual showing how absences can add up to chronic absenteeism during a school year<sup>50</sup>



Train all school personnel—teachers, administrative and support staff, counselors, and coaches—on the importance of attending every day. Hold information sessions for the entire school community at the start of each school year to discuss what constitutes chronic absenteeism. Remind school staff that it is difficult to create a culture where attendance matters if teachers and school staff themselves are absent frequently.

Throughout the school year, post visuals highlighting expectations for attendance in highly visible places. These help reinforce the school culture and message that attending school daily is important. For example, create a banner like the one shown in Example 1.8 describing attendance performance levels, as a simple way to communicate the goals and expectations for attendance.

### EXAMPLE 1.8

#### Sample banner on attendance performance levels<sup>51</sup>



## Recommendation 1 (continued)

To make attendance an integral part of school culture, schools can incentivize, recognize, and reward not only students, but also parents and teachers. Provide incentives to students and parents for attending school and for attending on time, as tardiness impacts learning as

well. Have inter-class competitions for best attendance or most improved attendance on a weekly basis, and reward both teachers and students for their efforts. See Example 1.9 for ideas for incentivizing, recognizing and rewarding parents, teachers, and students.

### EXAMPLE 1.9

#### Strategies for incentivizing, recognizing, and rewarding students, parents, and teachers in middle and high schools

**Caught-you:** Recognize students daily at random times during the day for being at school and/or being on time. Offer incentives such as homework passes, front-of-the-lunch-line passes, and special recognition from teachers and the principal.

**Raffles:** Have raffles on days with poor attendance (e.g., Mondays, Fridays, before and after holidays). Students only participate in the raffle if they are present the day of the drawing.

**Special events:** Plan special events the day before or returning from vacation.

**Parking:** Designate a parking space near the building for the student/teacher with the most improved attendance

**Over the PA:** Announce over the PA the classrooms with perfect attendance for that day.

**Post a picture:** Post a picture of the classroom(s) with the highest monthly attendance rate.

**Traveling trophy:** The class with the highest attendance keeps the Highest Attendance Trophy.

**Class party:** Have a class pizza party or movie/popcorn event as a reward for improved attendance.

**Certificates of Recognition:** During school assemblies, provide students, teachers, and parents with a Certificate of Recognition acknowledging their efforts at attendance.

**Special rewards:** During school assemblies, reward students and teachers for the best record or most improved record. Reward parents for sending their student to school on time or for meeting their student's personal improvement goal, using donations from local businesses (e.g., movie tickets, gift card to a supply store or local restaurant).

**Positive messaging:** Make phone calls and/or send positive notes to the parents of students whose attendance has improved.

#### 4. Monitor progress and adjust interventions as needed.

Regularly monitor the effectiveness of interventions by reviewing the data on target students' attendance, behaviors, and academic progress during team meetings. The interval for monitoring will vary depending on the student, the problem, and the intervention. In the case of a double-dose algebra class, for

example, it may be sufficient to monitor on a quarterly or semester basis. However, a student who has been absent several days each month can be monitored daily or weekly for changes in attendance. Pay particular attention to students' performance on indicators that the intervention is expected to influence.

## Recommendation 1 *(continued)*

Double-dose algebra, for example, would likely influence math grades, while daily wake-up calls would influence attendance during the first period.<sup>52</sup> Similarly, schools can monitor the impact of schoolwide interventions, such as attendance incentives, by reviewing school-level data at team meetings.

If no improvement is evident based on the data, determine whether an alternate course of action is necessary. Ascertain whether the intervention is being implemented as intended and if not, what can be done to facilitate better implementation. For

example, some interventions may not be implemented as intended because students are not following through with their commitments, or parents are not able to provide sufficient support. In such instances, provide additional support to ensure that the student receives the intervention, as described in Example 1.10. In some instances, the intervention may not be working and an alternate intervention may be needed.<sup>53</sup> Students who continue to not show improvement may need more intensive intervention, as described in Recommendation 2.

### EXAMPLE 1.10

#### Example of providing additional supports for a student

Consider Mikela, the 7th-grader who was sent to the office multiple times in a 2-week span for behavior issues (discussed earlier in Step 2). Noticing the problem, the school counselor, Arin, arranged for Mikela to attend the anger-management group at the school. Mikela, however, chose not to attend the group regularly. She also started to skip class. To hold Mikela accountable for her attendance, Arin gave Mikela a signature form for each of her teachers to sign when she attended her classes. He asked Mikela to get the anger-management group leader to sign the form as well.

A week later, when Arin checked Mikela's signature form, he noticed that Mikela had gotten very few signatures on her form. He realized that Mikela's attendance and behavior issues were not improving. He was worried they were going to start impacting her academic performance, causing Mikela to further disengage from school. He decided to try another approach before recommending her for a more intensive intervention (see Recommendation 2). Arin assigned Mikela a buddy, an older student who would walk with Mikela to her classes and attend the anger-management group with her.

Every week for the next 3 weeks, Arin asked Mikela for her signature forms. Unfortunately, week after week, though Mikela received more signatures, her teachers reported that her behavior was not improving. Mikela was not responding to the monitoring and intervention Arin was providing. Arin decided it was time to assign her an adult advocate who could identify what was going on and coordinate more targeted and intense supports to help her stay on track for graduation (see Recommendation 2).



### Potential obstacles to implementing Recommendation 1 and the panel's advice

**Obstacle 1.1.** *We often do not know about course failure until the end of the grading period, when it is too late to do anything.*

**Panel's advice.** In some schools, the data may not be collected centrally, and reports may not be generated until the end of the semester. In these schools, one option is to use real-time data directly from teachers' attendance and gradebooks. When teachers and other staff meet to discuss the data, they can make decisions by sharing their real-time data about student grades and attendance during the meetings. This will facilitate more timely monitoring and intervention.

**Obstacle 1.2.** *We already address academic-performance problems through retention and credit recovery, so additional interventions are not needed.*

**Panel's advice.** The panel firmly believes that it is better to intervene and engage students before they fail courses, because students are far more likely to stay on track and graduate if they pass courses, rather than taking credit-recovery courses. This is especially true when credit-recovery courses are offered online, as these courses may not provide students with the personal support and flexibility needed to understand the complex material with which they originally had difficulty.<sup>54</sup>

The panel recommends that schools treat retention and credit recovery as a last resort for students who are academically behind. Instead, intervene earlier, when students begin to miss coursework or receive their first D or F in a class. Provide tutoring, homework help, or other academic support. This approach may also save resources by replacing retention and credit-recovery courses, which are more expensive, with lower-cost interventions such as peer tutoring.

**Obstacle 1.3.** *Only our school administrator has access to the data reports and dashboards of our district early warning system.*

**Panel's advice.** Staff working on dropout issues in the school should be given access to individual student data on the ABC indicators (attendance, behavior, and course grades). At times, depending on the case, some of the staff may need access to other data pertinent to the situation. Note that data that is sensitive in nature cannot be shared with all staff in order to protect students' privacy. Federal laws, such as the Family Educational Rights and Privacy Act (FERPA) and the Health Insurance Portability and Accountability Act (HIPAA), govern access to and disclosure of data that can identify individual students.

Most data systems allow for different levels of access that comply with federal, state, and local laws and can be used to control what data are accessible to each staff member. If your system does not have a way to control access, request information from the district on which staff members can have access to the data reports. If all staff members working with these students cannot have access, create a report that excludes sensitive data or aggregates them across multiple students to share with the staff. Those who have access to the restricted data should be told that it is one of their job responsibilities to prepare data reports to share with other school staff, and there should be a process in place for them to prepare and distribute the reports.

**Obstacle 1.4.** *Our staff do not have time during their regular work day for meeting with their colleagues to address dropout issues.*

**Panel's advice.** School staff have busy schedules and may not have time to devote to working with their colleagues on dropout issues, even if they value these meetings.<sup>55</sup> In addition, employment contracts may limit or prohibit using non-work time, such as time

## Recommendation 1 *(continued)*

before or after school, for meetings. However, meetings to address dropout issues are essential if schools are to effectively use early warning systems to identify and intervene with at-risk students. Schools can organize staff schedules so there is dedicated time for them to collaborate and discuss at-risk students. For example, grade-level teams that meet regularly could schedule time during each meeting to share information about at-risk students and discuss how to work with them. Minimize the amount of work needed for meetings by leveraging resources like data coaches from the school district or state education agency, or staff from community organizations like Big Brothers/Big Sisters. These outside resources can put together early warning reports before meetings, facilitate meetings, and identify potential interventions.<sup>56</sup> If there is not enough time to discuss all students during meetings, assign staff to review data on specific students before the meeting and use the meeting time to debrief recommended interventions. During busy periods, staff can occasionally substitute an in-person meeting with a virtual meeting in

which staff provide input on specific students electronically at their convenience during the school day rather than meeting as a group.

**Obstacle 1.5.** *When we try to look at students' grades, we find that some teachers don't enter their grades in the electronic gradebook in a timely manner.*

**Panel's advice.** Regularly discussing students' grades with teachers provides an incentive for teachers to keep their grades up to date. In addition, the team or school administrator can set specific dates throughout the term when all grades need to be "caught up," rather than just once in the middle and once at the end. Regularly remind teachers that if they do not know which of their students are failing, then their students don't know it, either.

Students without complete grade records should be included on the list of at-risk students, and staff should discuss their performance with their teacher so that teachers without complete records realize that their students might be at risk.

## Recommendation 2



### **Provide intensive, individualized support to students who have fallen off track and face significant challenges to success.**

*Students who are already off track, who have not responded to interventions from Recommendation 1, or who must overcome large personal obstacles are unlikely to graduate without more intense intervention (see Example 2.1).<sup>57</sup> Regularly monitoring ABC data (described in Recommendation 1) will help staff identify which students are chronically absent or have failed multiple courses, which students are not responding to interventions, and which are facing significant personal challenges.*

A trained adult advocate can help these students by providing individualized support to meet their academic, personal, and emotional needs. An advocate is a student's "go-to person" for the resources and support needed to graduate, and typically provides these supports for the entire time a student is enrolled in the school, or, at a minimum, for a full school year. Advocates can be school staff or not employed by the school district. Advocates can identify unmet needs and provide or coordinate more intense, individualized support to help students get back on track for graduation.

#### **Summary of evidence: Moderate Evidence**

Eight studies contributed to the level of evidence for this recommendation (see Appendix D for more information).<sup>58</sup> All eight studies meet WWC group design standards without reservations, which is the highest possible rating for group design studies and indicates the highest degree of confidence that the observed effects were caused by the interventions. Four studies found that recommended practices improved student outcomes in

# Recommendation 2

## EXAMPLE 2.1

### Three types of students who may need individualized supports

#### 1. Students who are off track

- For example, students who
  - are chronically absent (less than 90% attendance), or
  - earned Ds or Fs in core courses (middle school) or credit-bearing courses (high school), or
  - have frequent behavioral incidents.

#### 2. Students who failed to respond to Recommendation 1

- Students are not responding to the monitoring and interventions offered in Recommendation 1.

#### 3. Students who face multiple or acute personal obstacles to overcome

- For example, students face sudden homelessness, trauma, or pregnancy.



at least one of the three outcome domains related to dropout prevention,<sup>59</sup> and two of the three studies that examined outcomes in the graduating school domain found positive effects on high school graduation.<sup>60</sup> Two of the four studies provide direct tests of the recommendation, evaluating interventions that are closely aligned with all of the

recommendation's steps and do not include components of other recommendations.<sup>61</sup> The study samples include at-risk students in both middle and high schools across the United States. The strong internal validity and generalizability, as well as the preponderance of positive effects, indicate a moderate level of evidence.

### Steps to carry out the recommendation

1. For each student identified as needing individualized support, assign a single person to be the student's primary advocate.

Provide each high-risk, high-needs student with an adult advocate whose primary task is to help students get back on track for graduation. The advocate is the "go-to person" for the student in the school or, as one student noted, "the person who stays on my back about coming to school."<sup>62</sup> Advocates provide students and their families with a trusted connection within the school and can act as a liaison among students, their families, and school staff.

The advocate should build a strong relationship with the students by communicating regularly with them and their families, providing additional support, and monitoring their progress.<sup>63</sup> These strong relationships are

likely to help students feel more connected to the school. If possible, the advocate should remain connected to the student through graduation and stay in touch year-round to maintain a relationship with the student and the student's family. Staying connected during the school breaks allows advocates to help students stay on track for graduation by guiding them toward summer school and helping them find summer employment or avenues for summer youth activities.<sup>64</sup> The panel realizes that supporting advocates over the summer can be difficult, but encourages schools to do so, especially as time required for supporting students during summer is likely to be less than the time required during the school year.

## Recommendation 2 (continued)

When students have multiple or acute needs, the advocate may also take on the additional role of a case manager. As a case manager, the advocate coordinates support from multiple sources to address needs he or she cannot handle singlehandedly (see Example 2.2). For example, the advocate might refer the student to professional counseling for anger management or connect the student with an after-school tutoring program.

Sometimes, because of his or her own workload, an advocate may not be able to take on the added role of a case manager. In that situation, another staff member may take on that role but would need to coordinate efforts with the advocate. Along with the advocate, case managers can develop individual case plans for students with more intense needs and connect students with community resources aligned with their case plan. Case managers also provide direct services, such as leading discussion groups on conflict resolution.<sup>65</sup>

### EXAMPLE 2.2

#### Suggested responsibilities for advocates and case managers

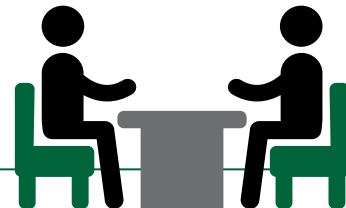
##### Advocate<sup>66</sup>

- **Build a strong relationship** with the student
- **Develop individualized student success plans** for each student
- **Monitor the student's** attendance, behavior, and academic progress regularly
- **Build a connection** between students, families, and school personnel
- Act as the **"go-to person"** at school for the student



##### Case Manager<sup>67</sup>

- **Link students to appropriate resources** in the school and community
- **Coordinate services** from the school and community
- **Provide counseling** for specific needs or refer the student to a counselor in the school or community



To facilitate building strong personal relationships with each student and to provide sufficient time for monitoring, assign a reasonable number of students to each advocate. The number of students assigned to a full-time advocate or case manager will depend on the needs of the students and the other resources available in the school and in the community. The panel suggests that advocates who have students with acute or multiple needs should have no more than 20 students as a full-time caseload.<sup>68</sup> However, for advocates whose caseloads include students with fewer demands, or for advocates who function more as case managers sharing their responsibilities with others in the school community, it may be possible to take on as many as 50<sup>69</sup> or 100<sup>70</sup> students. It is also important

to ensure that advocates are not given other responsibilities (e.g., covering classes when a teacher is absent) that take away time from these students.<sup>71</sup>

Choose advocates who have the time and energy to devote to the student's personal and academic success, are able to communicate effectively with school staff and families, and who accept students as they are and believe in their ability to succeed.<sup>72</sup> To work effectively with students, advocates may need to respond to students within 24 hours, conduct home visits, and be accessible to students during non-business hours, including weekends and evenings.<sup>73</sup> Note that while existing school personnel (e.g., counselors, teachers) can function as advocates, their regular duties

## Recommendation 2 (continued)

may not leave them with enough time to connect with multiple students, monitor their progress, and remain available during non-work hours, so they may be limited to working only with one or two students.

When existing staff cannot fill the roles of advocate or case manager, schools can hire external individuals from the community who have the necessary characteristics and qualifications for these roles. Advocates who are not employed by the school may have more flexible schedules, allowing them to devote

adequate time to the role. For example, advocates who are not employed by the school district may find it easier to continue supporting students during the summer because their work time is not tied to the school calendar. If resources are not available to hire staff or to expand the responsibilities of existing staff, train community volunteers (such as graduate students from local colleges or AmeriCorps volunteers) to serve as advocates. Advocates can come from a variety of backgrounds, but should have the key qualifications described in Example 2.3.<sup>74</sup>

### EXAMPLE 2.3

#### Key qualifications of an advocate<sup>75</sup>

- Advocacy and communication skills, such as the ability to negotiate, compromise, and confront conflict constructively
- Familiarity with the schools and community resources
- A belief that all students have abilities
- Willingness to work cooperatively with families and school staff



When assigning advocates to students, try to assign advocates who are from the same community, have similar interests, or share similar cultural or language backgrounds.<sup>76</sup> Advocates from the same community will find it easier to relate to students and

communicate with their parents. They will also be familiar with available community resources. For example, Spanish speakers may be assigned to Spanish-speaking individuals who can serve as an intermediary between the school and the family.

## 2. Develop a menu of support options that advocates can use to help students.

Create a menu of available services in and around the school community. The panel recommends that support options include academic-assistance services, behavioral interventions, mentoring, sources to address basic needs (e.g., provision of food and school supplies), college planning and preparation, rewards for improved behavior, and support for families. See Example 2.4 for a sample support menu. Schools can customize the sample support menu based on specific programs and interventions they want to provide for their students and their families.

Have advocates monitor students' attendance, behavior, and course performance regularly—as often as daily, if necessary—to determine whether students need additional support and which supports to provide.<sup>77</sup> See Example 2.5 for a sample monitoring sheet used to track students' attendance, behavior, and grades on a daily basis. The sheet also includes space to track the advocate's interventions with a student.

# Recommendation 2 (continued)

## EXAMPLE 2.4

**Sample support menu to address student and family needs<sup>78</sup>**

| STUDENT SUPPORT  |  |   | FAMILY SUPPORT  |
|--|--|---|---|
| Student attendance   | Student behavior                             | Student academic performance                                      |   |
| Provide attendance cards for each teacher to sign when students attend class | Provide social and emotional skills training | Implement individual performance contract with student and parent | Provide training on how parents can actively engage with their child's school     |
| Escort students from class to class  | Provide individual counseling sessions       | Provide one-on-one support with a reading or math specialist      | Provide tips for monitoring adolescents' behavior and academic performance        |
| Provide wake-up calls to students  | Implement daily behavior contract            | Provide after-school homework help                                | Provide training in accessing community resources and contacting school personnel |
| Organize transportation to school  | Provide peer mentoring                       | Follow-up daily on missed assignments                             | Provide help with getting welfare benefits or food stamps                         |

## EXAMPLE 2.5

**Sample monitoring sheet for student tracking<sup>79</sup>**

| Student Monitoring Sheet          |   | Student _____   | ID _____ |   |    |   |   |    |   |    |   |   |    |   |    |   |   |    |   |    |   |  |
|-----------------------------------|---|---|----------|---|----|---|---|----|---|----|---|---|----|---|----|---|---|----|---|----|---|--|
| Month                             | School _____                              | Monitor _____   |          |   |    |   |   |    |   |    |   |   |    |   |    |   |   |    |   |    |   |  |
|                                   |   | M   | Tu       | W | Th | F | M | Tu | W | Th | F | M | Tu | W | Th | F | M | Tu | W | Th | F |  |
| Check                             | Tardy                                     |   |          |   |    |   |   |    |   |    |   |   |    |   |    |   |   |    |   |    |   |  |
|                                   | Skip                                      |   |          |   |    |   |   |    |   |    |   |   |    |   |    |   |   |    |   |    |   |  |
|                                   | Absent                                    |   |          |   |    |   |   |    |   |    |   |   |    |   |    |   |   |    |   |    |   |  |
|                                   | Behavior referral                         |   |          |   |    |   |   |    |   |    |   |   |    |   |    |   |   |    |   |    |   |  |
|                                   | Detention                                 |   |          |   |    |   |   |    |   |    |   |   |    |   |    |   |   |    |   |    |   |  |
|                                   | In-school suspension                      |   |          |   |    |   |   |    |   |    |   |   |    |   |    |   |   |    |   |    |   |  |
| Out-of-school suspension          |   |   |          |   |    |   |   |    |   |    |   |   |    |   |    |   |   |    |   |    |   |  |
| Failing classes/Behind in credits |   | _____ D's _____ F's _____ Classes passed out of _____ total _____ Credits earned out of _____ total _____ |          |   |    |   |   |    |   |    |   |   |    |   |    |   |   |    |   |    |   |  |
| Connect                           | BASIC                                     |   |          |   |    |   |   |    |   |    |   |   |    |   |    |   |   |    |   |    |   |  |
|                                   | Shared general information                |   |          |   |    |   |   |    |   |    |   |   |    |   |    |   |   |    |   |    |   |  |
|                                   | Provided regular feedback                 |   |          |   |    |   |   |    |   |    |   |   |    |   |    |   |   |    |   |    |   |  |
|                                   | Discussed staying in school               |   |          |   |    |   |   |    |   |    |   |   |    |   |    |   |   |    |   |    |   |  |
|                                   | Problem-solved about risk                 |   |          |   |    |   |   |    |   |    |   |   |    |   |    |   |   |    |   |    |   |  |
|                                   | INTENSIVE                                 |   |          |   |    |   |   |    |   |    |   |   |    |   |    |   |   |    |   |    |   |  |
|                                   | Arranged for alternative to suspension    |   |          |   |    |   |   |    |   |    |   |   |    |   |    |   |   |    |   |    |   |  |
|                                   | Contracted for behavior or grades         |   |          |   |    |   |   |    |   |    |   |   |    |   |    |   |   |    |   |    |   |  |
|                                   | Communicated with parents                 |   |          |   |    |   |   |    |   |    |   |   |    |   |    |   |   |    |   |    |   |  |
|                                   | Made special accommodations               |   |          |   |    |   |   |    |   |    |   |   |    |   |    |   |   |    |   |    |   |  |
|                                   | Participated in community service         |   |          |   |    |   |   |    |   |    |   |   |    |   |    |   |   |    |   |    |   |  |
|                                   | Participated in school-sponsored activity |   |          |   |    |   |   |    |   |    |   |   |    |   |    |   |   |    |   |    |   |  |
|                                   | Participated in social skills group       |   |          |   |    |   |   |    |   |    |   |   |    |   |    |   |   |    |   |    |   |  |
| Worked with tutor or mentor       |   |   |          |   |    |   |   |    |   |    |   |   |    |   |    |   |   |    |   |    |   |  |
| Other:                            |   |   |          |   |    |   |   |    |   |    |   |   |    |   |    |   |   |    |   |    |   |  |

High risk for \_\_\_\_\_

## Recommendation 2 *(continued)*

There is no single approach that will work for every student. Advocates can use the support menu to create an individualized plan based on each student's needs. Some students are likely to need intensive counseling or one-on-one mentoring to address severe problems, while small-group interventions may suffice for others. For example, some students may need basic interventions, including feedback on their academic progress, discussion on the importance of staying in school, and problem-solving strategies. Others may need more intensive interventions, such as social-skills groups, parent problem-solving sessions,

individualized academic contracts, and help connecting with after-school activities.<sup>80</sup>

Schools can use resources from the What Works Clearinghouse to identify attendance, behavioral, and academic interventions with evidence of effectiveness. A school looking for interventions to improve students' literacy skills, for example, can search for literacy interventions with evidence of positive results with similar student populations, such as English language learners, or positive results for a specific skill, like reading comprehension.

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### 3. Support advocates with ongoing professional learning opportunities and tools for tracking their work.

The panel believes that an important step in offering intensive, individualized support for students is to provide ongoing professional support for the advocates who serve them. Advocates need proper training, ongoing feedback and mentoring, opportunities to share experiences with colleagues, and a system for tracking their work. All new hires need training that incorporates how and when to use electronic data systems or paper forms for monitoring and tracking, how to identify student needs and choose services within and outside of the school that will meet those needs, and how to be culturally sensitive. Learning how to build relationships with students who are struggling in many aspects of their lives, however, is best learned on the job by observing and shadowing experienced staff.

Pair new advocates with more experienced staff for mentoring. In addition to intentional pairing for peer-learning, allocate sufficient time for advocates to have regular meetings with a mentor and fellow advocates to review students' progress, reassess needs, and brainstorm ideas (see Example 2.6). If case management is done by a separate staff person, have the case manager join advocates in regular meetings to understand

the advocates' process for monitoring and supporting students.

Provide advocates with access to a monitoring system that will help them keep track of student intervention plans, log contacts with students, monitor student progress, and reassess student needs based on progress. Monitoring systems can be extensions of the data systems used in Recommendation 1 for gathering and organizing the data (i.e., spreadsheets, student information systems, or EWS). See Example 2.7 for a sample monitoring log. Note that advocates must also have access to student data that is relevant to the problem (e.g., attendance data, if attendance is an issue) to monitor and assess progress in real time. If case management is provided by a separate staff person, provide the case manager with information on students' progress on indicators relevant to the community resources they are receiving. This can help the case manager determine if programs are effective and if a student needs to be connected with a different community resource. Supervisors and school leaders should periodically review advocates' monitoring sheets, like the one shown in Example 2.5, and attendance records to verify that they are providing sufficient services to students.<sup>81</sup>



## EXAMPLE 2.6

### Example of supporting a new advocate

Juan is a new advocate. To start, he was assigned five students with multiple intense and complex needs. Before meeting with his students for the first time, he shadowed his mentor, Vanessa, for 2 weeks. He watched as Vanessa worked with her students throughout the school day, scheduled services (in and out of school as needed) for her students, and discussed her students' needs and their progress with their teachers.

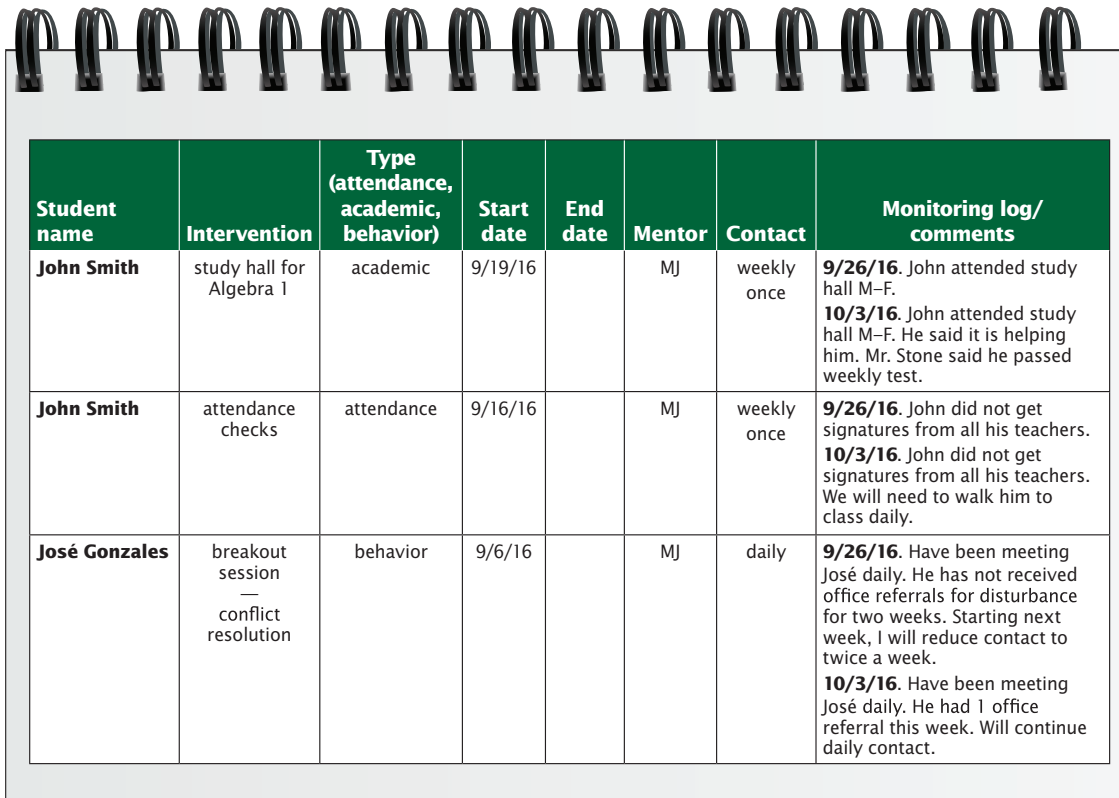
Juan listened as Vanessa and her student Ryan talked about how hard it is to go to school and concentrate on learning when his dad is sick. Vanessa validated Ryan's feelings and reminded him that she was here to help. She talked about how both she and his dad were hoping he would finish high school, because it is such an important step for his life. Juan listened as Vanessa arranged for a family member to drive Ryan to school each day and for a local charity to bring his family dinner on those evenings when his mom works late.

Once Juan began working with his students, he continued to meet with his mentor every week to discuss each student, how he planned to respond to their needs, and any issues that had developed since their last meeting. These meetings continued for the next 3 months. Gradually, the meetings tapered off, and Juan was assigned more students, until he had a final caseload of 20 students with intense needs.

After the weekly meetings tapered off, Vanessa reviewed Juan's logs every quarter to determine how well he was doing in improving his students' attendance, achievement, and behavior. Vanessa used these periodic reviews to provide Juan with ideas for improving his efforts to support his students.

## EXAMPLE 2.7

### Example of a mentor's monitoring log



| Student name  | Intervention                           | Type (attendance, academic, behavior) | Start date | End date | Mentor | Contact     | Monitoring log/ comments   |
|---------------|--|---------------------------------------|------------|----------|--------|-------------|--|
| John Smith    | study hall for Algebra 1               | academic                              | 9/19/16    |          | MJ     | weekly once | <b>9/26/16.</b> John attended study hall M-F.<br><b>10/3/16.</b> John attended study hall M-F. He said it is helping him. Mr. Stone said he passed weekly test.  |
| John Smith    | attendance checks                      | attendance                            | 9/16/16    |          | MJ     | weekly once | <b>9/26/16.</b> John did not get signatures from all his teachers.<br><b>10/3/16.</b> John did not get signatures from all his teachers. We will need to walk him to class daily.  |
| José Gonzales | breakout session — conflict resolution | behavior                              | 9/6/16     |          | MJ     | daily       | <b>9/26/16.</b> Have been meeting José daily. He has not received office referrals for disturbance for two weeks. Starting next week, I will reduce contact to twice a week.<br><b>10/3/16.</b> Have been meeting José daily. He had 1 office referral this week. Will continue daily contact. |

### Potential obstacles to implementing Recommendation 2 and the panel's advice

**Obstacle 2.1.** *My students with special needs already have case managers. Providing them with an advocate will duplicate work and cause confusion.*

**Panel's advice.** The roles and responsibilities of a special education case manager are limited to ensuring that students with special needs are on track to meet the goals listed in their Individualized Education Program (IEP) or to dealing with administrative issues relating to the provision of special education services. They do not typically address other student needs or problems (e.g., being homeless or engaging in gang-related activities) or coordinate services such as counseling to help students stay on track for graduation. To avoid confusion about roles and responsibilities, clearly define and explain the role of the advocate or case manager to the school staff.

**Obstacle 2.2.** *My school doesn't have funds to pay for advocates and engage in this type of close monitoring.*

**Panel's advice.** Consider applying for local or state ESSA funds (e.g., Title I, Part H funds). Schools can also partner with other schools to share mentors or work with local or national organizations, such as local colleges, AmeriCorps, or Big Brothers/Big Sisters to provide volunteer adult advocates. Another option is to hire additional staff only for students with the most complex cases. Ideally, after the provision of monitoring and preventative intervention from Recommendation 1, the number of students who need a case manager or advocate would be limited.<sup>82</sup>

**Obstacle 2.3.** *We hired advocates from outside the school, and they are experiencing resistance from other staff and are having difficulty accessing student data due to confidentiality concerns.*

**Panel's advice.** School administrative support is critical for ensuring the acceptance of hired advocates and case managers.<sup>83</sup> Rapport and trust with school staff take time to build, but having support from school administrators and clear delineation of roles will help pave the way for the integration of hired advocates. Administrators can facilitate integration by having advocates attend weekly or biweekly staff meetings and participate in periodic staff-development sessions.<sup>84</sup> Administrators can also share with teachers how important advocates are and how communicating with advocates (via text, call, or email) will help them be more effective. Administrators can create resource maps to clarify the staff roles and the services in the school to help inform school staff.<sup>85</sup> It may help to align advocates with school priorities to identify how the advocates address the school's unique needs, fit the school context, and are accountable for their work.<sup>86</sup>

Data systems that allow different levels of access are particularly helpful in addressing privacy and confidentiality concerns. Hired advocates can be given access to only information that is relevant and necessary for addressing their students' needs. For example, knowing that a student is homeless is relevant to addressing his or her school absences, while other personal information such as a history of past abuse may not be.

## Recommendation 3



### **Engage students by offering curricula and programs that connect schoolwork with college and career success and that improve students' capacity to manage challenges in and out of school.**

*Students are engaged in school when they are interested in their classes and see them as important to their future, and when they feel they belong in school. Engaged students have good attendance, come to class prepared, and are able to navigate daily challenges in and out of school.<sup>87</sup> These behaviors, in turn, improve course pass rates and help students establish positive relationships with teachers and peers, reinforcing students' sense of belonging in school.<sup>88</sup>*

Students may become disengaged from school for many reasons, including failing to see why school matters, believing they are not capable of succeeding in school, and feeling that school is a hostile, unsafe place.<sup>89</sup> Student engagement encompasses strong relationships among students, teachers, families, and schools. Facilitating these relationships can involve behavioral, emotional, and cognitive components.<sup>90</sup> Programs and curricula targeted at increasing the relevance of school, building supportive relationships, and helping

students manage challenges can help prevent disengagement. This recommendation includes multiple strategies educators can use to engage students, drawing on evidence supporting either college and career engagement or social and emotional learning. The panel recommends implementing this recommendation both as a proactive, schoolwide approach to prevent disengagement and as an intervention for students already showing signs of low engagement in school.

## Recommendation 3 *(continued)*

### Summary of evidence: Strong Evidence

Fourteen studies contributed to the level of evidence for this recommendation (see Appendix D for more information).<sup>91</sup> Eleven studies meet WWC group design standards without reservations, which is the highest possible rating for group design studies and indicates the highest degree of confidence that the observed effects were caused by the interventions.<sup>92</sup> Three studies meet WWC group design standards with reservations, which indicates a lower degree of confidence that the observed effects were caused by the interventions.<sup>93</sup> Nine studies found that the recommended practices improved student outcomes in at least one of the three outcome

domains related to dropout prevention,<sup>94</sup> and six of the seven studies that examined outcomes in graduating school found positive effects on high school graduation.<sup>95</sup> Four of the nine studies that found positive results provide direct tests of the recommendation, evaluating interventions that are closely aligned with all of the recommendation's steps and do not include components of other recommendations.<sup>96</sup> The study findings are collectively generalizable across different students and settings. The consistently positive effects on outcomes, strong internal and external validity, and repeated direct tests of the recommended practices indicate a strong level of evidence.

### Steps to carry out the recommendation

---

#### 1. Directly connect schoolwork to students' options after high school.

Make classes relevant by offering curricula and academic programs that are clearly connected to a career pathway or postsecondary education. These types of programs engage students by providing a path from school to life after high school. Schools with a college or career theme also provide a common focus for teachers and students, making it easier for teachers to collaborate, share information about student progress, and create a coherent schoolwide curriculum.<sup>97</sup> Examples 3.1 and 3.2 outline the key elements of effective college- and career-focused programs, and provide examples of how these elements might look in practice.<sup>98</sup>

Use the connection between coursework and the school's college or career program as a "hook" to engage students in their academic classes. Integrating career education and college-focused lessons into core academic classes is one strategy for helping students see how work in academic classes matters for life after high school.

Ensure that all students feel that their school challenges them academically and expects them to prepare for a productive future after high school.<sup>99</sup> For programs with a career focus, offer integrated courses that combine career education with traditional academic subjects. Example 3.3 summarizes two courses approved by the University of California Curriculum Integration office to teach career-related content in high school while also meeting requirements for entrance into the state university system, and Example 3.4 shows how college-focused lessons can be used to teach academic standards in middle school or high school. Career programs can also offer dual-enrollment courses through local colleges to allow students to earn college credit and to expose them to college-level work in the career field. For schools with a college focus, ensure that each student's individual graduation plan includes enough dual-credit courses to fulfill the school's goal for college credits at graduation. Some students may need a supplemental math course or English course to succeed in college preparatory classes.

## Recommendation 3 *(continued)*

### EXAMPLE 3.1

#### Checklist for effective college-focused programs<sup>100</sup>

| Key elements of college focused programs   | Examples of elements in practice   |
|--|--|
| <p>✓ All students receive college-preparation coursework and any additional academic support needed to meet these expectations.</p>  | <p>Each student's graduation plan aligns with course requirements for admission to the state's university system, such as a minimum of 4 years of math and 2 years of a laboratory science. Students who enter 9th grade behind in math get a daily supplemental math course to get them back on track for meeting college entrance requirements.</p>          |
| <p>✓ The school has an established partnership with a local college. As part of this partnership, a college faculty member serves as a liaison between the college and the school.</p> | <p>School leadership partners with the chair of the psychology department at a local community college. The department chair acts as the primary contact for designing a dual-enrollment course, facilitating college tours, and establishing dual-credit agreements.</p>  |
| <p>✓ Students' course of study includes dual-enrollment courses that allow students to experience college-level coursework.</p>  | <p>School leadership and a faculty member at a local community college work together to design a college course that teaches critical-thinking skills, with a focus on writing and presentations. The course introduces students to the rigors of college coursework and shows students that they belong in a college environment.</p>                         |
| <p>✓ Students' course of study allows them to earn college credits, with an explicit goal of having a degree or certain number of transferable credits upon graduation.</p>            | <p>Each student's graduation plan results in up to 2 years of college credit that can be transferred to a 4-year institution and/or result in an associate's degree. Credit is earned through dual-enrollment courses offered at a nearby college and dual-credit classes offered at the high school that qualify for both high school and college credit.</p> |

## Recommendation 3 *(continued)*

### EXAMPLE 3.2

#### Checklist for effective career-focused programs<sup>101</sup>

| Key elements of career focused programs   | Examples of elements in practice   |
|---|--|
| <p>✓ Learning materials are chosen and adapted to focus on an industry that is connected to regional workforce needs.</p>                               | <p>The school reviews data from the local and state economic- and workforce-development agencies and identifies health science as a high-demand industry in their area. The school then chooses learning materials that focus on careers within the health science industry, such as patient care and community health.</p>  |
| <p>✓ The career coursework and experiences are aligned with industry standards.</p>   | <p>An engineering program aligns coursework with manufacturing industry standards for entry-level employment. The school establishes an industry advisory board with local employers to identify relevant certification standards.</p>   |
| <p>✓ The academic curriculum enables students to learn skills related to the industry.</p>  | <p>Students in a medical sciences program learn to calculate medication dosages in their Algebra I class or study biometrics in their statistics class.<sup>102</sup></p>  |
| <p>✓ Local community colleges or technical schools advise on the industry-related curriculum and relevant student outcomes.</p>                         | <p>A school focused on advanced manufacturing partners with the local technical college to offer a dual-credit course in computer-integrated manufacturing. A representative from the college serves on the school's industry advisory board to advise on the manufacturing training curriculum.</p>   |
| <p>✓ Students participate in work-based learning that links classroom activities with work experiences, such as job shadowing and career mentoring.</p> | <p>A school focused on hospitality and tourism partners with local employers to offer job-shadowing experiences at area hotels and tourist attractions over spring break.</p>  |
| <p>✓ Counselors create an individualized graduation plan for each student based on students' career and education goals.</p>                            | <p>Starting in 9th grade, students work with their counselors to complete an individual graduation plan. Plans align students' career goals with their course of study, work, and extracurricular experiences, as well as giving students feedback on how their academic progress relates to their post-high school goals.</p>   |
| <p>✓ The career coursework is regularly evaluated against student outcomes and the needs of local industry and partners.</p>                            | <p>At the end of every year, a team of school staff examines academic outcomes, such as test scores, and measures of student engagement, such as climate surveys and attendance rates, to evaluate how the program can better meet student needs. Data are shared with the industry advisory board for input on how the program can be more relevant to local employers.</p> |

### EXAMPLE 3.3

#### Sample University of California Curriculum Integration courses that integrate academic and career technical education content<sup>103</sup>

*The University of California Curriculum Integration (UCCI) office develops courses that integrate academic subjects with career technical education content. UCCI courses also meet the University of California standards for course content and rigor needed to count toward admission to the University of California or California State University systems.*

#### Examples of courses:

##### **Physics and Engineering: Motion by Design**

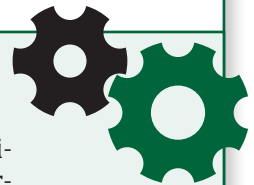
Students develop an understanding of fundamental concepts in physics and engineering and apply these concepts to a product-design cycle. Students design marketable products and develop skills in computer programming, 3-D modeling, and engineering technology. Assignments include designing a rotating pulley using computer-assisted design (CAD) software and producing a quality-control report that includes data from product testing.

✓ *Meets the University of California standards for a laboratory science course.*

##### **English 12 and Entrepreneurship: The Business of Agriculture**

Students learn about the agriculture industry while building the communication, critical-thinking, and business skills needed to develop and pitch a business plan. Students develop knowledge and skills in conducting research, reading nonfiction, oral communication, legal concepts, and marketing. Assignments include a group project analyzing and presenting solutions to sustainability issues within the California almond industry and developing a business plan based on an analysis of market opportunities within their neighborhood.

✓ *Meets the University of California standards for an English course.*



### EXAMPLE 3.4

#### Sample college-focused lessons that teach specific academic standards<sup>104</sup>

*The Realizing the College Dream curriculum guide offers ideas for lessons that increase students' awareness of college while also teaching middle school and high school academic standards in core subject areas. An example follows.*

**Lesson.** Students compare and contrast different financial-aid packages from four different institutions for a fictional student, building an understanding of concepts such as net cost and the basic types of financial aid. Students present the advantages and disadvantages of each financial-aid package and present their recommendation for the college they think the student should attend, and why.

#### **Related Mathematics and Social Studies Standards (National Council of Teachers of Mathematics and National Council for the Social Studies):**





- **Mathematics number and operations:** Students develop fluency in operations with real numbers, vectors, and matrices, using mental computation or paper-and-pencil calculations for simple cases and technology for more complicated cases; students judge the reasonableness of numerical computations and their results.
- **Production, distribution, and consumption:** Learners expand their knowledge of economic concepts and principles, and use economic reasoning processes in addressing issues related to the four fundamental economic questions. (Grades 6–8)

## Recommendation 3 *(continued)*

Reinforce the relevancy of coursework by creating a continuum of experiential learning outside the classroom that builds awareness of the connections between high school and students' college or career goals (Example 3.5). This might include work-based learning experiences that begin with bringing in outside speakers to discuss their professions and culminate with a summer internship before senior year. For schools with a college

focus, activities might start with an alumni panel discussing their college experience and culminate with students enrolling in a college course. Community resources, such as area employers, nonprofit organizations, and colleges, can support these efforts by providing guest speakers, hosting students for tours or job shadowing, and coordinating internships or dual-enrollment courses.

### EXAMPLE 3.5

| Continuum of experiential learning <sup>105</sup> |   |   |   |  |
|---|---|---|---|--|
|   | 9th grade   | 10th grade  | 11th grade  | 12th grade   |
|   | <br><b>Build awareness</b> | <br><b>Explore options</b>   | <br><b>Develop relevant knowledge and skills</b>               | <br><b>Gain hands-on experience</b> |
| How it looks in practice...                       |   |   |   |  |
| Health careers academy                            | Employees from the local hospital discuss their professions at career day.                                  | Students complete a spring break job shadow at the local hospital, learning about different medical careers.  | Students take a medical clinical class that combines instruction in clinical skills with a twice weekly internship at the local hospital.         | The summer after junior year, students complete an internship in the medical field.                                    |
| Early college pathway                             | Alumni who are enrolled in college return to talk with students about their experience.                     | Students tour area colleges and prepare a presentation about a college they are interested in attending, including admissions requirements, academic programs, and extracurricular opportunities. | Students complete college essays during their English language arts class and compare financial aid packages during math or social studies class. | Students complete a dual-enrollment course at the local community college.   |

## 2. Provide curricula and programs that help students build supportive relationships and teach students how to manage challenges.

Students with stronger **social and emotional skills** generally have better academic outcomes.<sup>106</sup> The Collaborative for Academic, Social, and Emotional Learning (CASEL) has identified five key social and emotional

learning (SEL) competencies that are important to student success in school and life (see Example 3.6): self-awareness, self-management, social awareness, relationship skills, and responsible decision-making.



### EXAMPLE 3.6

#### CASEL Framework for Social and Emotional Competencies<sup>107</sup>

*The Collaborative for Academic, Social, and Emotional Learning (CASEL) has developed a framework for the skills students need to effectively manage daily challenges. Their framework focuses on skills grouped under five core competencies:*

##### **Self-awareness:**

- identifying emotions
- accurate self-perception
- recognizing strengths
- self-confidence
- self-efficacy

##### **Self-management:**

- impulse control
- stress management
- self-discipline
- self-motivation
- goal-setting
- organizational skills

##### **Social awareness:**

- perspective-taking
- empathy
- appreciating diversity
- respect for others

##### **Relationship skills:**

- communication
- social engagement
- relationship-building
- teamwork

##### **Responsible decision-making:**

- identifying problems
- analyzing situations
- solving problems
- evaluating
- reflecting
- ethical responsibility

The panel recommends implementing explicit social and emotional training through either classroom curricula or separate programs that are offered outside of the classroom, depending on student risk level for low engagement. Skills taught through curricula and programs might include how to make better decisions in high-stakes situations, strategies for stress and anger management, and setting and tracking progress toward goals. Curricula and programs can also improve student engagement by teaching relationship-building skills through mentoring, peer support groups, and by fostering positive engagement with family and peers. Positive relationships within school, particularly between teachers and students, help students to develop a sense of belonging in school and reduce the likelihood that students will disengage.<sup>108</sup>

Use separate programs for groups of students who are at risk for low engagement, such as those transitioning to middle or high school, or for those already showing signs of

disengagement through low attendance rates and declining grades. Offer a peer mentoring program in which older students are carefully selected and trained to lead incoming 9th-grade students in group sessions that build students' social and emotional skills. In addition to teaching coping skills, mentoring provides students with positive peer relationships in school. Peer mentoring programs can be integrated into the school day by creating a leadership course in which mentors meet with faculty advisors 4 times a week to practice mentoring skills and then meet once a week with freshman students to lead a group mentoring session.<sup>109</sup>


To implement this recommendation with all students, the panel believes that instruction on managing challenges should be integrated into regular classroom instruction. This might include using a curriculum for explicit instruction on skills or coaching students on positive behaviors during everyday classroom activities. For example, use group work to

## Recommendation 3 *(continued)*

teach students positive approaches to working with peers. Start a group work lesson by asking the class to establish a list of “do’s and don’ts” for constructive group work. Finish the lesson with a class discussion in which the teacher and students share examples of good group work behavior that they observed, and

students reflect on what could be improved during group work.<sup>110</sup> Additionally, train teachers to use their daily interactions with students to reinforce students’ sense of belonging in school and strengthen teacher–student trust (see Example 3.7).

### EXAMPLE 3.7

| Everyday strategies for teachers to foster student engagement <sup>111</sup> |   |  |
|--|---|--|
| Strategy   | Why?  | What does this look like?  |
| <b>Acknowledge each student as they enter your classroom</b>                 | Noticing each student every day helps students feel connected to school and shows that someone cares. Greeting students at the beginning of each day or class with a simple question or positive comment lets students know they are valued in the school.                  | <ul style="list-style-type: none"> <li>• “Hi [student name]. It’s good to see you.”</li> <li>• “How was your weekend?”</li> <li>• “How is your project coming along?”</li> </ul>    |
| <b>Praise students’ effort and process</b>                                   | Emphasize the role of students’ effort and persistence in feedback on their work. This will reinforce that students have the ability to improve in a subject through work and that ability is not a fixed trait.  | <ul style="list-style-type: none"> <li>• “I like the way you approached this problem. Can you tell me about what you did?”</li> <li>• “I see that you worked hard on this assignment.”</li> <li>• “Your response is very creative. Can you explain your thinking?”</li> </ul>                                      |
| <b>Help students set goals and monitor progress toward the goals</b>         | Having students set ambitious, yet achievable, goals and marking progress toward those goals helps students develop strategies for self-management. Goal-setting also develops students’ belief in their capacity to reach a goal through hard work.                        | <ul style="list-style-type: none"> <li>• “What is a goal you want to achieve this week?”</li> <li>• “What do you think is the biggest obstacle to achieving this goal?”</li> <li>• “How can you overcome that obstacle?”</li> </ul>  |
| <b>Use a student-centered approach to classroom discipline</b>               | At the beginning of the school year, establish clear expectations for student behavior in collaboration with students. When a student misbehaves, ask the student to reflect on the reasons for his or her behavior and strategies that could have led to better decisions. | <ul style="list-style-type: none"> <li>• “What kind of classroom norms do we need so that every student has an opportunity to share his or her ideas?”</li> <li>• “How do you think your behavior made your classmates feel?”</li> <li>• “What other strategies could you have used in this situation?”</li> </ul> |

## Recommendation 3 *(continued)*

Districts and states can help schools prioritize teaching social and emotional skills by developing SEL standards with benchmarks for skills students should develop at each grade

level. Example 3.8 provides sample SEL standards from the Illinois State Board of Education.

### EXAMPLE 3.8

#### Sample social and emotional learning standards, Illinois State Board of Education<sup>112</sup>

| Goal   | Standard  | Grade level and benchmarks   | Sample performance descriptors  |
|--|---|--|---|
| Students use social-awareness and interpersonal skills to establish and maintain positive relationships.           | Students demonstrate an ability to prevent, manage, and resolve interpersonal conflicts in constructive ways. | <p>In early high school:</p> <ul style="list-style-type: none"> <li>analyze how listening and talking accurately help in resolving conflicts.</li> <li>analyze how conflict resolution skills contribute to work within a group.</li> </ul>                                      | <ul style="list-style-type: none"> <li>Evaluate the effectiveness of various strategies for dealing with negative peer pressure.</li> <li>Practice peer-mediation skills.</li> <li>Role-play de-escalating a conflict to avoid a fight.</li> </ul>  |
| Students demonstrate decision-making skills and responsible behaviors in personal, school, and community contexts. | Students apply decision-making skills to deal responsibly with daily academic and social situations.          | <p>In middle school/junior high school:</p> <ul style="list-style-type: none"> <li>analyze how decision-making skills improve study habits and academic performance.</li> <li>evaluate strategies for resisting pressure to engage in unsafe or unethical activities.</li> </ul> | <ul style="list-style-type: none"> <li>Practice aligning nonverbal and verbal communication in refusing unwanted behavior.</li> <li>Describe the effects of procrastination and disorganization on academic outcomes.</li> <li>Use a decision log for 24 hours to identify influences on own health decisions.</li> </ul> |

To reinforce skills taught through separate programs or classroom instruction, students will need regular opportunities to practice and apply their skills. Use role-playing exercises like the one described in Example 3.9 to allow students to practice and reflect on their social and emotional skills in and out of the classroom. Everyday activities, such as classroom group work, behavioral incidents, and

daily interactions with students, also provide opportunities for teachers and other school staff to coach students on strategies for managing conflict and allow students to practice their skills. Once students are taught social and emotional skills, they can also practice them outside of school through service-learning projects and internships.

## EXAMPLE 3.9

### Sample role-playing activity for conflict-management skills<sup>13</sup>

*The instructor leads the class in a role-playing exercise in which students work in pairs to demonstrate appropriate and inappropriate ways to manage conflict.*



The instructor divides the class into pairs. Student A is told to borrow an object from student B. Student B should then imagine that some time has passed and student A has failed to return the borrowed object. Student B then role-plays trying to get the object back in two ways: (1) in an out-of-control manner, using an aggressive attitude or action, and (2) an in-control manner, using a positive attitude or action.

Once the students have role-played both scenarios, the instructor should generate a discussion with students on the differences between the two ways in which they attempted to get their object back. The goal of the discussion is for students to realize that there is a positive way to manage conflict, and that this can often yield better results. During the discussion, the instructor should try to highlight skills such as stress management, self-control, social values, dealing with anger or hostility, and peer group behaviors.

#### Examples of discussion prompts:

- If this situation occurred outside of school, how many of you would initially react in an out-of-control manner?
- How might you react differently in school?
- What are some of the skills needed to be able to react in an in-control manner?
- What are some of the benefits of acting in an in-control manner in this situation and in situations like this?

### 3. Regularly assess student engagement to identify areas for improvement, and target interventions to students who are not meaningfully engaged.

Administer school climate and student engagement surveys annually. Analyze survey results along with regularly monitored early warning indicators, such as attendance and grades (as described in Recommendation 1). The panel believes that school climate and student engagement surveys can supplement early warning indicators, helping staff identify the root cause behind low attendance rates or slipping grades. For example, early warning indicators may show low attendance among 9th-grade students, indicating that students are disengaging from school. The school climate survey can supplement that information by showing low levels of trust between students and teachers, or a feeling

#### Free school climate and student engagement surveys<sup>14</sup>

| Survey name                        | Provider                     |
|------------------------------------|------------------------------|
| ED School Climate Surveys (EDSCLS) | U.S. Department of Education |
| 5Essentials Survey                 | University of Chicago        |
| GALLUP Student Poll                | Gallup, Inc.                 |

## Recommendation 3 *(continued)*


among students that the school does not have high expectations for postsecondary success for all students.

There are several free school climate and student engagement surveys available.<sup>115</sup> Choose a survey tool that is valid (accurately measures what it says it will measure) and reliable (measures those concepts consistently across questions, over time, and across different

school environments). The survey should also align with what the school staff and community have decided is important for student engagement in their school, and with concepts that research shows are related to student outcomes.<sup>116</sup> Example 3.10 provides sample survey questions on academic engagement, student–teacher trust, and the importance of school for the future, concepts which are related to higher student engagement.<sup>117</sup>

### EXAMPLE 3.10

#### Sample student engagement survey questions<sup>118</sup>

| How much do you agree with the following statement...  | What is being measured  |
|--|---|
| <ul style="list-style-type: none"> <li>• I usually look forward to this class.</li> <li>• I work hard to do my best in this class.</li> <li>• Sometimes I get so interested in my work I don't want to stop.</li> <li>• The topics we are studying are interesting and challenging.</li> </ul>   |  <p><b>Academic engagement</b></p> |
| <ul style="list-style-type: none"> <li>• When my teachers tell me not to do something, I know they have a good reason.</li> <li>• I feel safe and comfortable with teachers at this school.</li> <li>• My teachers always keep their promises.</li> <li>• My teachers will always listen to students' ideas.</li> <li>• My teachers treat me with respect.</li> </ul>  | <p><b>Student-teacher trust</b></p>   |
| <ul style="list-style-type: none"> <li>• My classes give me useful preparation for what I plan to do in life.</li> <li>• High school teaches me valuable skills.</li> <li>• Working hard in high school matters for success in the workforce.</li> <li>• What we learn in class is necessary for success in the future.</li> <li>• I have someone who is helping me with my college and career goals.</li> </ul> | <p><b>Importance of school for the future</b></p>   |

In addition to assessing schoolwide strengths and weaknesses, use annual survey data, along with the ABC data described in Recommendation 1, to identify groups of students with low levels of engagement. For example, if entering 9th-graders report few positive peer relationships or low levels of student–teacher trust, invest in a peer mentoring program or curriculum focused on building social

and emotional skills. Or, if engagement data indicates that students don't see their coursework as relevant to their future, establish teacher teams to focus on using integrated coursework that connects academic skills with future college or career options. These interventions can supplement the interventions described in Recommendation 1.

### Potential obstacles to implementing Recommendation 3 and the panel's advice

**Obstacle 3.1.** *Teachers are focused on traditional academics and resistant to integrating a career curriculum.*

**Panel's advice.** Teachers of academic subjects may not be comfortable integrating a career theme into their regular academic instruction because they are not knowledgeable about that career theme and have not been trained on integrating career and academic topics during instruction.<sup>119</sup> Provide teachers with additional support and build their knowledge of the career topic through partnerships with industry experts. Establish an industry advisory board with area employers and representatives of technical schools or area colleges to support teachers by advising on lesson plans, hosting teachers for jobsite visits, and volunteering employees to provide feedback on student work.<sup>120</sup>

Teachers may also be concerned that the career focus will take time away from instruction required to meet state standards, jeopardizing their ability to prepare students for end-of-year exams. Provide teachers with time during the school week to collaborate as cross-subject teams and plan lessons. Plan professional development to support teachers in developing an integrated curriculum by providing training on aligning lessons with state standards and creating project-based lessons that combine the career focus and multiple academic subjects. Utilize existing resources that have already developed integrated lesson plans, such as the University of California Curriculum Integration courses (see Example 3.3). Emphasize that adding a career focus can help engage students in the content.

Districts can support teachers in integrating academic and career curricula by encouraging collaboration among district-level career education and curriculum and instruction staff.<sup>121</sup> Districts can also provide schools with flexibility in choosing a curriculum that allows teachers to teach both academic and career-related standards.<sup>122</sup>

**Obstacle 3.2.** *We do not have enough staff to deliver a program focused on building students' capacity to manage challenges in and out of school.*

**Panel's advice.** Schools do not need to hire additional staff to oversee a separate program. Instead, infuse the teaching of social and emotional skills into the regular curriculum through structured group work, modeling skills for students, and explicit instruction on problem-solving or decision-making skills (see Example 3.7). Districts and states can support schools in integrating SEL into instruction by adopting SEL standards for each grade level, providing sample lesson plans, and professional development (see Example 3.8).

Students who show signs of low engagement may need additional support beyond what teachers can provide during classroom instruction. Offer these students a peer mentoring program that is integrated into the regular school day, and provide selected peer mentors with training and oversight through a credit-bearing leadership course that meets as a regularly scheduled class. One class a week can be a mentoring session during which peer mentors meet with their mentees and implement an established curriculum.<sup>123</sup>

**Obstacle 3.3.** *We do not have enough time during the day for students to practice problem-solving or anger-management skills.*

**Panel's advice.** The school day presents many naturally occurring opportunities for students to practice skills developed through classroom instruction and/or special programs. Train all staff, including support staff, to identify opportunities for students to practice those skills. For example, staff can respond to misbehavior in the hallway by asking students to reflect on the impact of their behavior on the school community and the decision-making process that led to their behavior choice.

## Recommendation 4



### **For schools with many at-risk students, create small, personalized communities to facilitate monitoring and support.**

*Schools with large numbers of at-risk students may struggle to provide students with the personalized attention and support described in Recommendations 1, 2 and 3. By grouping students into **small communities** of no more than a few hundred students,<sup>124</sup> teachers and other school staff will have fewer students to monitor and manage, and will be better able to implement Recommendations 1, 2, and 3. In a small, personalized community, staff can check in with students more frequently, pay closer attention to their needs, form stronger and more meaningful relationships with them, and keep track of what troubles and motivates them.<sup>125</sup> As students, teachers, and other school staff get to know one another throughout the year, students will feel more connected to the people in their school and develop a greater sense of belonging in the school community, which will help them persevere to graduation.<sup>126</sup>*

Planning a smaller community typically takes an entire year and requires commitment from important stakeholders, including parents, staff, and leadership. Because of the additional resources required to implement this recommendation, the panel is only

recommending creating small communities in schools with large numbers of students at risk for dropping out. That said, there may be benefits for all students, including improving engagement and promoting college and career readiness.

## Recommendation 4 (continued)

This guide focuses on creating small communities because it is a practice that can be implemented by individual schools, but this recommendation can also be implemented at the district level by creating small schools. The panel believes that it is important to create a supportive learning environment in which teams of teachers get to know their students at a personal level, whether that is through small communities within schools or whole small schools.

### Summary of evidence: **Moderate Evidence**

Eight studies contributed to the level of evidence for this recommendation (see Appendix D for more information).<sup>127</sup> Six studies meet WWC group design standards without reservations, which is the highest possible rating for group design studies and indicates the highest degree of confidence that the observed effects were caused by the interventions.<sup>128</sup> Two studies meet WWC group design standards with reservations, which indicates a lower degree of confidence that the observed effects were caused by the interventions.<sup>129</sup> Seven studies found that the recommended practices improved student outcomes in at least one of the three outcome domains related to dropout prevention,<sup>130</sup> and the four studies that examined outcomes in the graduating school domain all found positive effects on high school graduation.<sup>131</sup> Collectively, the studies demonstrate moderate external validity,

### If my school is already small, do I need to do anything?

The panel believes that being small by itself is not sufficient to address dropout issues. The key is to create a more personalized, supportive learning environment for the students who are struggling. To reap the benefits of smallness, the panel recommends implementing the action steps articulated in this recommendation.



examining diverse samples in school settings. However, only one study supporting this recommendation examines an intervention that provides a direct test of this recommendation,<sup>132</sup> and most of the supporting studies examine a variation of the recommendation—creating small schools rather than small communities within existing schools. The panel believes that the evidence supporting small schools is applicable to small communities within schools as well, because many of the key components of small schools—specifically, personalization, monitoring, and rapid intervention—can be replicated in small communities. The studies collectively demonstrate strong internal validity and found consistent effects on graduation, but the examined interventions do not completely align with the recommendation’s steps, indicating a moderate level of evidence.

### Steps to carry out the recommendation

#### 1. Decide whether the small communities will serve a single grade or multiple grades.

Examine school data to determine whether patterns of at-risk students indicate that students would be better served with single- or multiple-grade communities. For example, if the patterns in the school data suggest that students begin struggling in the transition years (6th or 9th grades), consider creating single grade transition-year academies. Transition-year academies serve all students in a specific grade and focus on the particular

needs experienced by students as they start middle school or high school and must adjust to new demands and expectations and to having more freedom in school.

Other schools may find that their data indicate worsening trends as the students enter higher grade levels. These schools could form college- or career-focused communities that include all students at multiple grade levels.



## Recommendation 4 *(continued)*

For example, a school may want to create smaller, career-oriented communities from 10th to 12th grade to help students see how their education is useful for preparing for future careers.<sup>133</sup>

Finally, schools can create smaller communities that span all grades to allow students to

develop strong peer relationships that begin when they enter school and last through graduation.<sup>134</sup>

Example 4.1 describes how transition year and 10th to 12th grade academies might work in practice, using an example case study that will continue throughout this recommendation.

### EXAMPLE 4.1

#### Case study of a fictional Central High School with a large number of at-risk students

##### CASE STUDY

Mrs. Rickard is the principal at Central High School. Central serves 2,000 students and a large portion of students who are off track for graduation. To make it easier to monitor and provide proactive interventions (Recommendation 1), to provide adult advocacy and case management for students who were already off track (Recommendation 2), and to integrate stronger social skills and community-oriented programming (Recommendation 3), she decided to create smaller communities.

Looking at the school data, Mrs. Rickard realized that the freshman rates of absences and course failures were troublesome. She decided to create Freshman Academies for all freshman, dividing the entire class into five academies, with 100–120 students per academy.

Mrs. Rickard also realized that students in grades 10–12 were struggling. Struggling students in these grades have often shared with her and the school counselor that they did not see a reason for continuing in high school. The principal decided the school needed to do something to help these students connect their education with something more meaningful, like a specific career path (e.g., work in health services, informational technology, or the hospitality industry) or interest area (e.g., science and technology).

After gauging her students' and teachers' level of interest in the small communities and finding that some preferred and flourished in the traditional school structure, Mrs. Rickard decided to make academy participation voluntary. She created four multi-year grade 10–12 academies, with approximately 300 students each, in addition to her five Freshman Academies. Since the rest of the grade 10–12 students would remain as a typical school structure, students, parents, and teachers could opt in to a grade 10–12 academy if they wanted to join one of these smaller communities.

To ease implementation, Mrs. Rickard decided to roll out the freshman academies the following year and the academies for grade 10–12 in 2 years.

## 2. Create teams of teachers that share common groups of students.

Create teacher teams that work with the same students for the entire time students are part of the small community (either the entire year or multiple years).<sup>135</sup> For example, teachers in the grade 10–12 career academy should teach

their group of students for multiple years, preferably all 3 years to allow for continuity. By teaming and remaining with students longer, teachers can form stronger, longer-lasting relationships with their students and

## Recommendation 4 (continued)

provide consistency, even when there is some staff turnover. This allows the teachers to monitor and proactively intervene with students who are at risk for dropping out (see Recommendation 1).<sup>136</sup> The small community will allow teachers to know each student personally, making it easier for students to ask for help from teachers and easier for teachers to provide support.<sup>137</sup>

Creating small teacher teams makes it easier for teachers to share information about students with each other. Teacher teams share responsibility for a smaller group of at-risk students, allowing them to more easily distribute the workload for monitoring students' attendance, behavior, and course performance and intervening when needed. Also, the advocate assigned to higher-risk students (see Recommendation 2) will find it easier to regularly communicate with their students' teachers, since there are fewer teachers and they remain with the students longer.

Equitably divide the teaching skill and talent, as well as access to advanced or other high-interest courses, across the small communities. A single community should not have all the most talented and skilled teachers or the most challenging and interesting courses. High-quality instruction and advanced or elective courses must be available in every community.

Determine how the teams will be supported with resources and administrative leadership within the larger school. Communities can be self-contained with their own resources and administrative structure, or they can share leadership and resources with the larger school. Teacher leaders can act as an intermediary form of leadership between the smaller community and the larger school administration. Example 4.2 describes how this might look in practice in the case study.

### EXAMPLE 4.2

#### Case study, continued: Teacher teams, resources, and leadership for Central High School

##### CASE STUDY

**Mrs. Rickard created five teams of freshman academy teachers and four teams of grade 10–12 teachers for the multi-year academies.** Each team included teachers to cover each of the core courses (i.e., English language arts, social studies, math, and science). The grade 10–12 teams also included a career–technical education teacher. The teacher teams were tasked with not only teaching the students in their academy, but also monitoring their progress and supporting them as needed.

**Mrs. Rickard provided the academies with additional flexibility over scheduling and funds for field trips.** This flexibility allowed each academy to modify their schedule to integrate the academy theme into core course instruction and facilitate team teaching. For example, academies could combine classes like English language arts and social studies into an integrated humanities block, or adjust their schedule to allow students to engage in real-world, multi-week projects.

**To help her coordinate activities across all nine academies, Mrs. Rickard reorganized staff responsibilities so that the freshman academy program and the grade 10–12 academy program were each overseen by a teacher leader.** Teacher leaders worked with teacher teams to help with managing resources, monitoring student progress, and coordinating student supports.

### 3. Identify a theme to help build a strong sense of identity and community and to improve student engagement.

Select a small-community theme, often a topic or subject matter, around which the small communities can be organized. See Example 4.3 for sample themes. The panel believes that themes strengthen small communities and facilitate implementing the steps described in Recommendation 3. Themes provide a sense of shared identity for the students in the community; this feeling of belonging helps students feel

connected to their schooling.<sup>138</sup> A theme also provides opportunities for innovative teaching that connects what students are learning to what they will be doing after they graduate (see Recommendation 3). To help students engage in and identify with the school theme, plan special activities such as speakers, field trips, or community-service activities that relate to the theme.<sup>139</sup>

#### EXAMPLE 4.3

##### Sample small-community themes<sup>140</sup>

| Broad academic topics   | Specific topics   | Career-related topics   |
|---|---|---|
| <ul style="list-style-type: none"> <li>• Humanities</li> <li>• Science and technology</li> <li>• Society and culture</li> </ul> | <ul style="list-style-type: none"> <li>• Performing arts</li> <li>• Environmental studies</li> <li>• Social justice in America</li> </ul> | <ul style="list-style-type: none"> <li>• Communications and media</li> <li>• Health</li> <li>• Public safety</li> </ul> |

Involve all stakeholders in determining the school theme.<sup>141</sup> Before choosing a theme, schools should survey and meet with potential students, parents, and teachers to narrow down a list of themes that may interest them. Working with an interdisciplinary team of teachers, including potential teacher leaders,

select a theme for each smaller community from those with the highest votes. Themes can evolve over time—if students' interests change, consider changing the theme for the next year. Example 4.4 describes this step in more detail for the case study.

### EXAMPLE 4.4

#### Case study, continued: Creating themed academies for grades 10–12 at Central High School

##### CASE STUDY

To begin choosing themes, **Mrs. Rickard informally discussed the idea with her staff to gauge their interest in themed academies.** She provided examples of themes other schools had generated. From these conversations, she helped the group generate an initial list of themes.

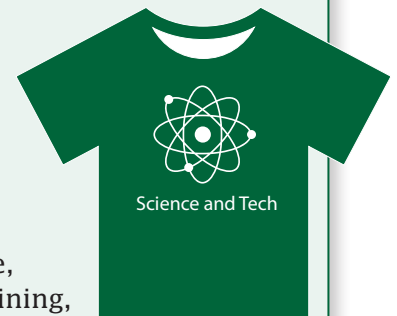
**The initial list of more than 20 themes was used in a survey of parents, students, and school personnel.** By surveying the school community, she narrowed the list of possible themes to 8.

**Mrs. Rickard then met with potential teacher leaders from multiple disciplines.** Together they chose themes for each community from those with the highest votes that they felt would interest students, parents, and teachers. They chose (1) policing and public service, (2) medical and health-related careers, (3) visual and performing arts, and (4) science and technology careers.

**The themes were shared with all incoming students in grades 10–12.** Students were asked to apply to their top three choices. Mrs. Rickard considered student preferences and student characteristics to assign them to academies. She sought to match students with themes they were interested in while also creating a heterogeneous mix of students in each community that reflected the demographics of the larger school. This ensured students were able to interact with a diverse group of their peers in the small communities.

**Art teachers worked with students in each community to develop a logo to represent their theme.** These logos were used to identify the community in school publications and to create community t-shirts. Students were asked to wear their t-shirt every Friday to promote their community.

**The teachers in each community planned projects, speakers, and field trips related to the theme of their community.** For example, students in the medical and health academy took courses in CPR/AED training, anatomy and physiology, and health skills. They also shadowed healthcare workers in hospitals and local medical centers. Similarly, students in the visual and performing arts academy took courses in drama, vocal performance, and instrumental music in addition to their core courses. They also participated in choirs and orchestras, performed at local community events, and visited local performing arts centers.



## Recommendation 4 (continued)

### 4. Develop a schedule that provides common planning time and ample opportunities for staff to monitor and support students.

To help students and teachers get to know one another, develop a master schedule that permits teachers and students to remain in their community most of the day. More than half the classes taught by the teacher team should be within the smaller community, and students should take most, if not all, courses from teachers in their communities.<sup>142</sup> Example 4.5 describes how this might work in practice in the case study.

Master schedules should also include common planning times for teacher teams.<sup>143</sup> Common planning times can occur during shared periods throughout the day, a late

start or early release day each week, or a time during a block schedule when students are engaged in other activities. Teacher teams should use their common planning times to:

- develop activities that relate to the theme of the community, link course content to the theme, and further engage students in getting to know their community;
- collaboratively identify concerns and develop solutions; and
- discuss academic and behavioral progress with students and their parents.

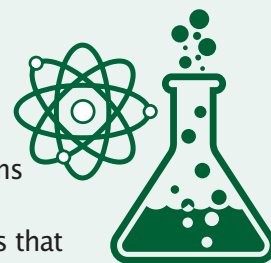
#### EXAMPLE 4.5

##### Case study, continued: Developing a schedule for Central High School

##### CASE STUDY

**Mrs. Rickard realized that, with the old schedule, teachers were so busy teaching six classes a day, class after class, that they didn't have time to work together or to get to know their students.** Teachers and students needed a new schedule that would allow them to remain together for most, if not all, of their day. She wanted her teacher teams to be able to fully focus on the community and not be torn between their small community and other school responsibilities.

**Mrs. Rickard also wanted the teacher teams to have sufficient time to develop integrated lessons and activities** that would enhance the theme of their communities and enable them to get to know their students, what they are struggling with, and ways to address those concerns. She worked with her administrators to create a schedule that allowed teacher teams 3 hours of shared common planning time every Wednesday afternoon. She specifically chose a day during the middle of the week to discourage absences that might occur on shortened days so close to the weekend (i.e., Monday or Friday).



**Mrs. Rickard also instituted specific tasks for teachers to accomplish** during this time to ensure the time was used well. During this common planning time, teams were asked to (1) debrief the previous week, what worked well and what didn't, (2) discuss student progress and any problems that needed to be addressed, and (3) develop interdisciplinary lessons and activities for the following week that would support school communities.

**Mrs. Rickard also worked with her teacher teams** to find a time each week for the small communities to work on a theme-related project/activity or to attend a community event or speaker related to their theme.

### Potential obstacles to implementing Recommendation 4 and the panel's advice

**Obstacle 4.1.** *It takes too much time, effort, and resources to create these small communities. We are not sure it is worth it.*

**Panel's advice.** Creating small communities is no simple task. It takes more than a year to plan and requires extensive leadership commitment and stakeholder involvement. It may also involve restructuring of the physical space and administrative structure in a school. Given the time, effort, and resources needed to create these small communities, the panel recommends creating small communities in schools with large numbers of at-risk students. These efforts may be costly, but schools with small learning communities have been found to have positive effects on staying in school, progressing in school, and graduating school.<sup>144</sup>

**Obstacle 4.2.** *Some teachers and parents feel that the smaller learning communities will not provide the diverse peer experiences that contribute to learning and may lead to sorting students by academic achievement or motivation.*

**Panel's advice.** Develop selection criteria and a transparent assignment system to ensure that all students have equitable access to these smaller learning communities. For example, schools can develop criteria that favor enrolling similar numbers of at-risk students in each community. The administrator should keep those criteria in mind when assigning students to small communities. After at-risk students are assigned to the small community, use a lottery system to fill the remaining spots to form a community that demographically represents the larger community.

If it is not an option to use selection criteria to promote diversity, there are other

approaches schools can use to promote diverse peer experiences. Some small learning communities are structured so that students take core and themed classes within the community, and other classes with students throughout the school. Small learning communities can also consider partnering with other schools to offer classes or extracurricular activities together to facilitate diverse peer experiences.

**Obstacle 4.3.** *Some parents and students are not enthusiastic about the theme(s) of their small community.*

**Panel's advice.** Involve all the constituents (teachers, parents, students) in the selection of the themes from the beginning. Once themes are identified, it is equally important to ensure that parents and students know about each available theme so they can make informed decisions in applying to those they are interested in.

Before students and parents choose which community to join, encourage students to reflect on their interests, skills, and career aspirations. The U.S. Department of Labor website includes a self-assessment that students can use to help identify their interests.<sup>145</sup> Encourage students to choose a theme that fits their own interests, rather than those of their friends.

Students' interests may change during their time in the community, and they may wish to pursue a different theme, similar to changing majors in college. Schools can offer "open enrollment" periods to accommodate these changes, so long as implications for graduation requirements are not major. As discussed above, schools should preserve the flexibility to change themes from one year to the next if there are widespread shifts in interests.

## Recommendation 4 *(continued)*

**Obstacle 4.4.** *Teachers are concerned that if they have to teach within a small community, they will need to teach subjects in which they have little expertise.*

**Panel's advice.** Teachers might be asked to teach more than one course within their subject matter experience (e.g., Introduction to Chemistry and Advanced Chemistry), but it is highly unlikely that they will be asked to teach courses for which they are not credentialed (since doing so may violate state regulations). Teachers may well have more unique “preps” than in the past (e.g., three rather than two different levels of English, or both American and Western European history). To reduce the burden, have colleagues who have already taught those courses share their curricular materials. Alternatively, teaching multiple classes in a subject might be offset by the introduction of block

scheduling, so the number of preps in any given day will not increase.

**Obstacle 4.5.** *We need to help students now, not in the year it will take to create a small community.*

**Panel's advice.** To reap the benefits sooner, implement key strategies used in small communities as soon as possible. These can include alternative or block scheduling that allows teachers to be responsible for fewer students and a teacher advisory program where teachers are assigned to a small number of students for whom they are responsible over multiple years. By implementing these strategies first, schools may reap some of the benefits of a small community before they are able to fully implement the smaller learning community approach.

# Glossary

## D

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**Dropping out** occurs when students leave school for any reason before they earn a high school diploma without transferring to another elementary or secondary school.

## E

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An **early warning system** is a set of indicators, data, and reports used to monitor student progress and a process for using the data to inform and direct interventions or responses when the data indicate students are in need of additional supports.

**Evidence-based** practices, policies, or recommendations are supported by studies that meet WWC design standards with or without reservations.

## G

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**Graduating school** refers to graduation from high school with a high school diploma.

## M

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**Multi-component interventions** include multiple instructional practices related to more than one recommendation. Multi-component interventions are also referred to as “bundled interventions.”

## O

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Students who are **off track for graduation** have low attendance rates, behavioral problems, or academic problems that put them at risk of dropping out.

**Outcome domains** are groups of closely-related outcomes. A domain is the organizing construct for a set of related outcomes through which studies claim effectiveness. In practice guides, the WWC assesses the rigor of evidence on the effectiveness of interventions or practices within each domain identified in the review protocol. The review protocol for *Preventing Dropout in Secondary Schools* includes three outcome domains: staying in school, progressing in school, and graduating school.

## P

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Measures of **progressing in school** include the number of high school course credits the student has earned, whether the student was promoted to the next grade, and the highest grade the student has completed. It also includes on-track indicators, which are based on multiple indicators of student progress (e.g., credit accumulation and course failures).



### S

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**Small communities** (or small learning communities) create smaller groups of students within a school that are led by dedicated teacher teams to provide a more personalized experience.

**Social and emotional learning and/or skills** encompass the behaviors, attitudes, and strategies needed to deal effectively with daily challenges, including managing emotions, setting and achieving goals, showing empathy for others, establishing and maintaining positive relationships, and making responsible decisions.

Measures of **staying in school** include whether a student has dropped out of school and the number of days the student was enrolled in school.

## Postscript from the Institute of Education Sciences

### What is a practice guide?

The Institute of Education Sciences (IES) publishes practice guides to share evidence and expert guidance on addressing education-related challenges not readily solved with a single program, policy, or practice. Each practice guide's panel of experts develops recommendations for a coherent approach to a multifaceted problem. Each recommendation is explicitly connected to supporting evidence. Using What Works Clearinghouse (WWC) group design standards and WWC pilot regression discontinuity standards, the supporting evidence is rated to reflect how well the research demonstrates the effectiveness of the recommended practices. *Strong evidence* means positive findings are demonstrated in multiple well-designed, well-executed studies, leaving little or no doubt that the positive effects are caused by the recommended practice. *Moderate evidence* means well-designed studies show positive impacts, but there are questions about whether the findings can be generalized beyond the study samples or whether the studies definitively show evidence that the practice is effective. *Minimal evidence* means that there is not definitive evidence that the recommended practice is effective in improving the outcome of interest, although there may be data to suggest a correlation between the practice and the outcome of interest. (See Table A.1 for more details on levels of evidence.)

### How are practice guides developed?

To produce a practice guide, IES first selects a topic. Topic selection is informed by inquiries and requests to the WWC Help Desk, a limited literature search, and evaluation of the topic's evidence base. Next, IES recruits a panel chair who has a national reputation and expertise in the topic. The chair, working with IES and WWC staff, then selects panelists to co-author the guide. Panelists are selected based on their expertise in the topic area and the belief that they can work together to develop relevant, evidence-based recommendations. Panels include two practitioners with expertise in the topic.

Relevant studies are identified through panel recommendations and a systematic literature search. These studies are then reviewed against the WWC group design standards by certified reviewers who rate each effectiveness study. The panel synthesizes the evidence into recommendations. WWC staff summarize the research and help draft the practice guide.

IES practice guides are then subjected to external peer review. This review is done

independently of the IES staff that supported the development of the guide. A critical task of the peer reviewers of a practice guide is to determine whether the evidence cited in support of particular recommendations is up-to-date and that studies of similar or better quality that point in a different direction have not been overlooked. Peer reviewers also evaluate whether the level of evidence category assigned to each recommendation is appropriate. After the review, a practice guide is revised to meet any concerns of the reviewers and to gain the approval of the standards and review staff at IES.

### Institute of Education Sciences levels of evidence for What Works Clearinghouse practice guides

*This section provides information about the role of evidence in IES's WWC practice guides. It describes how practice guide panels determine the level of evidence for each recommendation and explains the criteria for each of the three levels of evidence (strong evidence, moderate evidence, and minimal evidence).*

The level of evidence assigned to each recommendation in this practice guide represents

the panel's judgment of the quality of the existing research to support a claim that, when these practices were implemented in past research, positive effects were observed on student outcomes. After careful review of the studies supporting each recommendation, panelists determine the level of evidence for each recommendation using the criteria in Table A.1. The panel first considers the relevance of individual studies to the recommendation and then discusses the entire evidence base, taking the following into consideration:

- the number of studies
- the study designs
- the internal validity of the studies
- whether the studies represent the range of participants and settings on which the recommendation is focused
- whether findings from the studies can be attributed to the recommended practice
- whether findings in the studies are consistently positive

A rating of *strong evidence* refers to consistent evidence that the recommended strategies, programs, or practices improve student outcomes for a diverse population of students.<sup>146</sup> In other words, there is strong causal and generalizable evidence.

A rating of *moderate evidence* refers either to evidence from studies that allow strong causal conclusions but cannot be generalized with assurance to the population on which a recommendation is focused (perhaps because the findings have not been widely replicated) or to evidence from studies that are generalizable but have some causal ambiguity. It also might be that the studies that exist do not specifically examine the outcomes of interest in the practice guide, although the studies may be related to the recommendation.

A rating of *minimal evidence* suggests that the panel cannot point to a body of evidence that demonstrates the practice's positive effect

on student achievement. In some cases, this simply means that the recommended practices would be difficult to study in a rigorous, experimental fashion;<sup>147</sup> in other cases, it means that researchers have not yet studied this practice, or that there is weak or conflicting evidence of effectiveness. A minimal evidence rating does not indicate that the recommendation is any less important than other recommendations with a strong or moderate evidence rating.

In developing the levels of evidence, the panel considers each of the criteria in Table A.1. The level of evidence rating is determined by the lowest rating achieved for any individual criterion. Thus, for a recommendation to get a strong rating, the research must be rated as strong on each criterion. If at least one criterion receives a rating of moderate and none receives a rating of minimal, then the level of evidence is determined to be moderate. If one or more criteria receive a rating of minimal, then the level of evidence is determined to be minimal.

The panel relied on WWC group design standards and WWC pilot regression discontinuity standards to assess the quality of evidence supporting education programs and practices. The WWC evaluates evidence for the causal validity of instructional programs and practices according to WWC group design standards. Information about these design standards is available at <https://whatworks.ed.gov>. Eligible studies that meet WWC group design standards without reservations or meet WWC group design standards with reservations are indicated by **bold text** in the endnotes and references pages.

### A final note about IES practice guides

In policy and other arenas, expert panels typically try to build a consensus, forging statements that all its members endorse. Practice guides do more than find common ground; they create a list of actionable recommendations. Where research clearly shows which practices are effective, the panelists

use this evidence to guide their recommendations. However, in some cases, research does not provide a clear indication of what works. In these cases, the panelists' interpretation of the existing (but incomplete) evidence plays an important role in guiding the recommendations. As a result, it is possible that two teams of recognized experts working independently to produce a practice guide on the same topic would come to very different conclusions. Those who use the guides should recognize that the recommendations

represent, in effect, the advice of consultants. However, the advice might be better than what a school or district could obtain on its own. Practice guide authors are nationally recognized experts who collectively endorse the recommendations, justify their choices with supporting evidence, and face rigorous independent peer review of their conclusions. Schools and districts would likely not find such a comprehensive approach when seeking the advice of individual consultants.

**Institute of Education Sciences**

**Table A.1. Institute of Education Sciences levels of evidence for What Works Clearinghouse practice guides**

| Criteria   | STRONG Evidence Base   | MODERATE Evidence Base   | MINIMAL Evidence Base  |
|--|--|--|--|
| <b>Validity</b>  | High internal validity (high-quality causal designs). Studies must meet WWC design standards with or without reservations. <sup>148</sup><br>AND<br>High external validity (requires multiple studies with high-quality causal designs that represent the population on which the recommendation is focused). Studies must meet WWC design standards with or without reservations. | High internal validity but moderate external validity (i.e., studies that support strong causal conclusions, but generalization is uncertain).<br>OR<br>High external validity but moderate internal validity (i.e., studies that support the generality of a relation, but the causality is uncertain). <sup>149</sup>                                      | The research may include evidence from studies that do not meet the criteria for moderate or strong evidence (for example, case studies, qualitative research).  |
| <b>Effects on relevant outcomes</b>                      | Consistent positive effects without contradictory evidence (i.e., no statistically significant negative effects) in studies with high internal validity.   | A preponderance of evidence of positive effects. Contradictory evidence (i.e., statistically significant negative effects) must be discussed by the panel and considered with regard to relevance to the scope of the guide and intensity of the recommendation as a component of the intervention evaluated.  | There may be weak or contradictory evidence of effects.  |
| <b>Relevance to scope</b>                                | Direct relevance to scope (i.e., ecological validity)—relevant context (for example, classroom vs. laboratory), sample (for example, age and characteristics), and outcomes evaluated.   | Relevance to scope (ecological validity) <u>may vary</u> , including relevant context (for example, classroom vs. laboratory), sample (for example, age and characteristics), and outcomes evaluated. At least some research is directly relevant to scope (but the research that is relevant to scope does not qualify as strong with respect to validity). | The research may be out of the scope of the practice guide.  |
| <b>Relationship between research and recommendations</b> | Direct test of the recommendation in the studies or the recommendation is a major component of the intervention tested in the studies.   | Intensity of the recommendation as a component of the interventions evaluated in the studies <u>may vary</u> .   | Studies for which the intensity of the recommendation as a component of the interventions evaluated in the studies is low; and/or the recommendation reflects expert opinion based on reasonable extrapolations from research. |

*(continued)*

**Table A.1. Institute of Education Sciences levels of evidence for What Works Clearinghouse practice guides (continued)**

| Criteria  | STRONG Evidence Base  | MODERATE Evidence Base  | MINIMAL Evidence Base   |
|---|---|---|---|
| <b>Panel confidence</b>                                   | The panel has a high degree of confidence that this practice is effective.  | The panel determines that the research does not rise to the level of strong but is more compelling than a minimal level of evidence.<br><br>The panel may not be confident about whether the research has effectively controlled for other explanations or whether the practice would be effective in most or all contexts. | In the panel's opinion, the recommendation must be addressed as part of the practice guide; however, the panel cannot point to a body of research that rises to the level of moderate or strong.  |
| <b>Role of expert opinion</b>                             | Not applicable  | Not applicable  | Expert opinion based on defensible interpretations of theory (theories). (In some cases, this simply means that the recommended practices would be difficult to study in a rigorous, experimental fashion; in other cases, it means that researchers have not yet studied this practice.) |
| <b>When assessment is the focus of the recommendation</b> | For assessments, meets the standards of <i>The Standards for Educational and Psychological Testing</i> . <sup>150</sup> | For assessments, evidence of reliability that meets <i>The Standards for Educational and Psychological Testing</i> but with evidence of validity from samples not adequately representative of the population on which the recommendation is focused.   | Not applicable  |

# Appendix B

## About the Authors

### Panel

**Russell W. Rumberger, Ph.D. (Chair)**, is Professor Emeritus in the Gevirtz Graduate School of Education at the University of California, Santa Barbara. His research focuses on education and work; the schooling of disadvantaged students, particularly school dropouts and linguistic minority students; school effectiveness; and education policy. He has served on three committees of the National Research Council (NRC) and was a member on the Institute of Education Sciences panel that produced the *Dropout Prevention Practice Guide* (2008). His book, *Dropping Out: Why Students Drop Out of High School and What Can Be Done About It* (Harvard University Press, 2011) was called a “masterpiece” by the *Washington Post* and nominated for the American Educational Research Association (AERA) Outstanding Book Award. From 2010 to 2012, he served as the Vice Provost for Education Partnerships, University of California Office of the President. He currently directs the California Dropout Research Project, which produces reports and policy briefs about the dropout problem in California. In 2013, he was made a Fellow of the AERA and received the Elizabeth G. Cohen Distinguished Career in Applied Sociology of Education Award, Sociology of Education SIG, AERA. In 2016, he was elected to the National Academy of Education.

**Howard (Sandy) Addis, Ph.D.**, is the director of the National Dropout Prevention Center and Network. He holds an Ed.D. in Educational Leadership from South Carolina State University. He has 44 years of experience in public education in a variety of roles that include teacher, counselor, coach, principal, system-level administrator, and director of a regional educational service agency. Dr. Addis has designed and administered a variety of dropout prevention initiatives that include after-school programs, counseling, and service learning. Dr. Addis has served as an alternative school principal and authored

numerous grant proposals that funded summer programs, professional learning, family engagement, and character education. Dr. Addis has served as an adjunct instructor at several universities, trained local school boards, and consulted with local school systems on policy and leadership development. He has led educator teams in the development and distribution of student-achievement measures and online systems for delivery of educator training. Dr. Addis has served on numerous professional boards, testified before legislative committees, and serves as a local school board member.

**Elaine Allensworth, Ph.D.**, is the Lewis-Sebring Director of the University of Chicago Consortium on School Research, where she conducts studies on students’ educational attainment and school improvement. Her research on high school graduation has been used to create early warning indicator systems in school districts across the country. She is one of the authors of the book *Organizing Schools for Improvement: Lessons from Chicago*, which documents the ways in which organizational structures in schools influence improvements in student achievement. Dr. Allensworth has been the principal investigator on research grants from funders such as the Institute of Education Sciences, the National Science Foundation, and the Bill and Melinda Gates Foundation. She frequently works with policymakers and practitioners to bridge research and practice, serving on panels, policy commissions, working groups, and review panels at the local, state, and national level.

**Robert Balfanz, Ph.D.**, is a research professor at the Center for the Social Organization of Schools at The Johns Hopkins University School of Education, where he is the director of the Everyone Graduates Center. He has published widely on secondary-school reform, high school dropouts, early warning systems, chronic absenteeism, school climate, and instructional interventions in high-poverty schools. He focuses on translating research

findings into effective school interventions. He is also a frequent speaker on dropout prevention, school reform, and early warning systems, and has consulted with numerous state departments of education. His work was featured in PBS *Frontline*'s "The Education of Omarina." Dr. Balfanz is the first recipient of the Alliance for Excellent Education's Everyone a Graduate Award and the National Forum to Accelerate Middle-Grade Reform Joan Lipsitz Lifetime Achievement Award. In 2013, he was named a Champion for Change for African American Education by President Obama and is also an education fellow for the Middle School Matters program at the George W. Bush Institute. He holds a B.A. in history from The Johns Hopkins University and a Ph.D. in education from the University of Chicago.

**Debra Duardo, M.S.W., Ed.D.**, is the superintendent of the Los Angeles County Office of Education. She provides leadership and support to superintendents and other top administrators in 80 school districts serving 1.5 million students. Previously Executive Director of Student Health and Human Services for the Los Angeles Unified School District, Dr. Duardo has dedicated her more than 20 years in public education to eliminating barriers to student success. Her unique life experience as a teen mom and high school dropout drives her passion to ensure that students from all backgrounds are given the greatest chance to become prepared for college and careers.

**Mark Dynarski, Ph.D.**, is the founder of Pemberton Research LLC, specializing in education and social-program evaluation. Previously, Dr. Dynarski was vice president at Mathematica Policy Research, the director of its Center for Improving Research Evidence, and the director of the What Works Clearinghouse. He chaired the panel that produced the first practice guide on dropout prevention. He is a nationally recognized expert on evaluation methodology, a member of the National Research Council's Board on Testing and Assessment, a senior fellow (nonresident) at the Brookings Institution, a senior fellow in education reform at the

George W. Bush Institute, an associate editor of *Effective Education*, on the editorial board of *The Elementary School Journal*, and has served as an associate editor of *Educational Evaluation and Policy Analysis* and the *Economics of Education Review*. He has a Ph.D. in economics from The Johns Hopkins University and was a professor of economic theory and econometrics at the University of California, Davis.

### Staff

The panel would like to thank Daisy Gonzalez and the team of WWC certified reviewers for their contributions to this practice guide.

**Julie Bruch, M.P.A.**, is a researcher at Mathematica Policy Research. She led the evidence reviews and the panel's effort to synthesize the evidence for this guide, and helped draft the text of the practice guide. She is a certified WWC reviewer and helped develop the *Teaching Secondary Students to Write Effectively* and *Teaching Strategies for Improving Algebra Knowledge in Middle and High School Students* practice guides.

**Erin Dillon, M.A.**, is a researcher at Mathematica Policy Research. She helped coordinate the review of studies for the practice guide and draft the text of the practice guide. Ms. Dillon is a certified WWC reviewer and has served as a reviewer for the *Teaching Secondary Students to Write Effectively* practice guide and for IES-sponsored studies.

**Joshua Furgeson, Ph.D.**, is the vice president for evaluation and learning at The Possible Project. Before joining The Possible Project, he was a senior researcher at Mathematica Policy Research and a former high school teacher. He has helped develop four other WWC practice guides: *Improving Mathematical Problem Solving in Grades 4 Through 8*; *Teaching Strategies for Improving Algebra Knowledge in Middle and High School Students*; *Foundational Skills to Support Reading for Understanding in Kindergarten Through 3rd Grade*; and *Teaching Secondary Students to Write Effectively*.

**Kate Place, Ed.M.**, is a research analyst at Mathematica Policy Research. She is a WWC certified reviewer for group design and single-case design studies. Currently, she serves as the deputy for the WWC Special Education topic area.

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## Disclosure of Potential Conflicts of Interest

Practice guide panels are composed of individuals who are nationally recognized experts on the topics about which they are making recommendations. The Institute of Education Sciences (IES) expects the experts to be involved professionally in a variety of matters that relate to their work as a panel. Panel members are asked to disclose these professional activities and institute deliberative processes that encourage critical examination of their views as they relate to the content of the practice guide. The potential influence of the panel members' professional activities is further muted by the requirement that they ground their recommendations in evidence that is documented in the practice guide. In addition, before all practice guides are published, they undergo an independent external peer review focusing on whether the evidence related to the recommendations in the guide have been presented appropriately.

The professional activities reported by each panel member that appear to be most closely associated with the panel recommendations are noted below.

**Howard (Sandy) Addis** is the executive director of the National Dropout Prevention Center and Network, a nonprofit 501(c)3 organization that is housed at and managed by Clemson University. The National Dropout Prevention Network owns a variety of publications related to dropout prevention that are offered for sale on the National Dropout Prevention Center and Network website, [www.dropoutprevention.org](http://www.dropoutprevention.org). It is possible that publication of this practice guide increased interest in and market for the publications that are offered for sale by the National Dropout Prevention Network. The number of the above-referenced publications that might demonstrate increased sales volume is approximately 20. The average price of these publications is \$15.00 each. The current average sales volume of these publications is approximately 20 copies each per year. Resources from the National Dropout Prevention Network were used to develop examples in the guide.

**Elaine Allensworth** is the Lewis-Sebring Director of the University of Chicago Consortium on School Research (CCSR), a unit of the University of Chicago Urban Education Institute. CCSR published studies that are referenced in this guide and were used to develop examples for the guide. CCSR

research informed the development of the 5Essentials Survey, which is referenced as a resource under Recommendation 3 and is administered by UChicago Impact, also a unit of the Urban Education Institute. It is possible that publication of this practice guide increased interest in the 5Essentials Survey, which schools and districts can pay UChicago Impact to administer.

**Robert Balfanz** is the co-director of the Everyone Graduates Center at the Center for Social Organization of Schools at The Johns Hopkins University. The Everyone Graduates Center has a technical-assistant contract to provide implementation support and training on the use of early warning systems to a set of school districts in New Mexico. He also helped develop the *Diplomas Now* program through Talent Development Secondary, which provides direct support to schools aimed at increasing student on-track and graduation rates, including in the implementation and use of early warning systems. The evidence base for this practice guide includes studies in which *Diplomas Now* was the primary intervention. *Diplomas Now* practices were also used to develop examples in the guide.

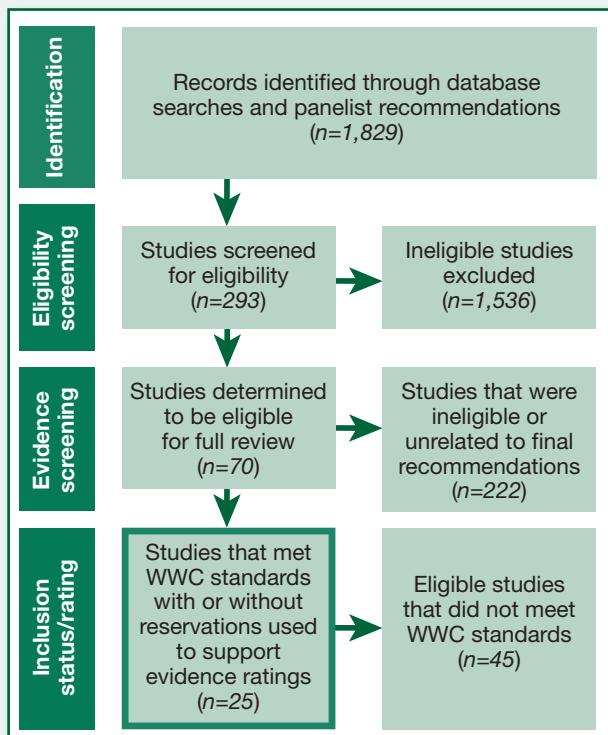
**Debra Duardo** serves as a board member for the National Dropout Prevention Center and Network, a nonprofit 501(c)3 organization that is housed at and managed by Clemson University. Resources from the National Dropout Prevention Network were used to develop examples in the guide.

## Rationale for Evidence Ratings<sup>151</sup>

The level of evidence assigned to each recommendation is based on the findings of eligible studies that examined the effectiveness of recommended practices and meet What Works Clearinghouse (WWC) group design standards.<sup>152</sup> The studies were primarily identified through a keyword search of several databases. The search focused on studies that were made publicly available between January 1987 and January 2016 that examined practices aimed at dropout prevention. It captured published and unpublished research literature. This search was supplemented with additional studies recommended by the panel.

The search and panelists identified 1,829 unique studies (see Figure D.1). These studies were then screened using eligibility requirements described in the protocol. For example, the study had to be publically available, use an eligible design, and examine students in secondary schools. A total of 70 studies met protocol requirements and tested interventions that are related to one or more recommendations. These studies were reviewed using WWC group design standards or WWC pilot regression discontinuity standards, and 25 studies meet standards with or without reservations.

**Figure D.1. Flow diagram for study identification, screening, eligibility, and inclusion status/ratings**



For this practice guide, study findings are classified as having a positive or negative effect when the findings are either:

- statistically significant ( $p \leq 0.05$ ),<sup>153</sup> or
- substantively important as defined by the WWC.<sup>154</sup>

Findings that met neither criteria are classified as “indeterminate effects.”

As described in the introduction to this guide, the panel and practice guide staff assigned a level of evidence to each recommendation after examining the entire body of evidence supporting each recommendation. In particular, the level of evidence assigned to each recommendation was based on the consistency of effects, the strength of relationship between the evidence and the recommendation, and the internal and external validity of each study. The magnitude of the effects and the sample sizes of each individual study were not considered.

Some studies met WWC group design standards but did not adjust statistical significance when there were multiple comparisons within an outcome domain or when the unit of assignment was different from the unit of analysis (“clustering”). For example, a study may assign classrooms to intervention and comparison conditions but analyze individual student test scores. In these cases, the WWC adjusted for clustering and multiple comparisons within a domain.<sup>155</sup>

**Eligible populations.** The recommendations in this guide are primarily intended for use in secondary schools and

school-affiliated programs that serve students at risk for dropping out of school. To be eligible for review, a study must involve students currently enrolled in school. Thirteen studies examined interventions delivered to subgroups of at-risk students within a school,<sup>156</sup> and one study examined an intervention delivered to all Hispanic students within a school.<sup>157</sup> Nine studies examined interventions delivered to all students in a grade or school, regardless of individual students' risk for dropping out.<sup>158</sup> In these studies, the sample schools serve primarily at-risk students. The final two studies examined alternative schools specifically designed for at-risk students.<sup>159</sup>

**Eligible outcomes.** The study outcomes were classified into three primary domains related to dropout prevention (see Table D.1). Outcomes in the staying in school domain include measures of enrollment in school. Outcomes in the progressing in school domain indicate whether students are completing required courses and advancing to the next grade on schedule. Measures in this domain are particularly useful for identifying students who are still enrolled but are falling behind and may be at risk for future dropout. Outcomes in the graduating school domain include measures of graduation with a high school diploma. In some cases, graduation outcomes may measure graduation from a specific school or district, rather than graduation from any school.<sup>160</sup> A positive effect always indicates that the intervention group outperformed the comparison group for a particular outcome.

While this appendix describes the full body of evidence reviewed for this guide on staying in school, progressing in school, and graduating school, when possible the guide highlights the effects that recommended practices have on graduation. This focus was chosen because the panel determined that graduation should be the ultimate objective of dropout prevention efforts, as earning a high school diploma is more consistently correlated with success in postsecondary

education and in the labor market than leaving high school without a diploma.<sup>161</sup> If there is conflicting evidence for different types of outcomes—for example, an intervention has positive effects on staying in school in the short term but indeterminate effects on graduation—the findings on graduation are weighted more heavily in determining the level of evidence for the recommendation. The panel does not want to recommend practices that are only effective at keeping students in school in the short term but not at eventually helping them to graduate.

Seven studies that include eligible outcome measures in the progressing in school, staying in school, or graduating school domains also reported additional outcomes of interest related to school completion, postsecondary education, and labor-market participation (see Table D.1).<sup>162</sup> These outcomes do not contribute to the levels of evidence for recommendations. However, the panel determined that they might be affected by dropout prevention practices and be of interest to educators and practitioners who are implementing these practices. These outcomes are presented in Tables D.2–D.5 in italicized gray font.

Many of the eligible outcomes can be reported at different time points. The tables in this appendix report progressing in school and staying in school outcomes that have the longest timeframes, as the ultimate goal of reducing dropout is high school graduation. For example, a multi-year study may report persistence after 1 year and after 2 years. In this case, the tables report persistence after 2 years. Eligible outcomes measured at other points in time are presented in the table notes.<sup>163</sup>

Graduation can also be measured at different time points (e.g., 4 or 6 years after 9th-grade enrollment). The tables report graduation at 4 years after 9th-grade enrollment, when available, because this is the most commonly reported timeframe for graduation outcomes across studies in this guide.<sup>164</sup> If a study does not report 4-year graduation but does report graduation at another point in time, the

**Table D.1. Description of outcome domains**

| Outcome Domain   | Sample Outcomes   |
|--|---|
| <b>Dropout prevention outcome domains</b>                |   |
| <b>Staying in school</b>                                 | <ul style="list-style-type: none"> <li>▪ number of days enrolled in school</li> <li>▪ whether student dropped out of school</li> </ul>  |
| <b>Progressing in school</b>                             | <ul style="list-style-type: none"> <li>▪ number of high school course credits earned</li> <li>▪ promotion to the next grade</li> <li>▪ highest grade student completed</li> </ul> |
| <b>Graduating school</b>                                 | <ul style="list-style-type: none"> <li>▪ graduation with a high school diploma</li> </ul>   |
| <b>Additional outcome domains of interest</b>            |   |
| <b>Completing school</b>                                 | <ul style="list-style-type: none"> <li>▪ completing school with a GED or a high school diploma</li> </ul>   |
| <b>Postsecondary access and enrollment</b>               | <ul style="list-style-type: none"> <li>▪ enrollment in college</li> <li>▪ intensity of enrollment (full- or part-time)</li> </ul>   |
| <b>Postsecondary credit accumulation and persistence</b> | <ul style="list-style-type: none"> <li>▪ number of college-level credits earned</li> <li>▪ number of terms of continuous enrollment</li> </ul>                                    |
| <b>Postsecondary attainment</b>                          | <ul style="list-style-type: none"> <li>▪ completion of degree, certificate, or program</li> </ul>   |
| <b>Labor market</b>                                      | <ul style="list-style-type: none"> <li>▪ employment after high school completion</li> <li>▪ income earned after high school completion</li> </ul>                                 |

tables report the graduation outcome closest to 4 years after 9th-grade enrollment.

For studies that report multiple outcome measures within a domain, the tables in this appendix report the overall average effect size for all measures in the domain meeting WWC group design standards.

Course grades are not an eligible outcome,<sup>165</sup> but some measures that are eligible in the progressing in school domain are based on multiple course grades (e.g., credits earned and grade promotion).<sup>166</sup> Attendance and behavior are not eligible outcomes, although they are sometimes correlated with dropout and with other eligible outcome measures.

**Interventions including components from multiple recommendations.** Some study interventions included multiple practices related to more than one recommendation (**multi-component interventions** or bundled interventions). For example, the *Early College High Schools* intervention includes tracking student progress and intervening when students are off track (Recommendation 1), building personal relationships and incorporating college-readiness initiatives

(Recommendation 3), and creating small, autonomous schools located on college campuses (Recommendation 4).<sup>167</sup> Any component of this intervention—and thus the relevant practices corresponding to any of these recommendations—could have caused the reported effects in the study. The effects might have also been caused by interactions between the practices from two or more recommendations.

The panel and staff considered the degree of bundling as one factor when determining the level of evidence. For studies of interventions with multiple components, the panel and staff considered whether all of the implemented practices could have plausibly affected dropout prevention outcomes, and which of the practices were critical to the intervention. The following factors affected how these studies contributed to the level of evidence:

- The study could support a *strong* level of evidence for a recommendation if the recommendation’s practices were considered by the panel as a critical part of the intervention (i.e., the intervention would have been fundamentally different without the recommendation’s practices).

- The study could support a *moderate* level of evidence for a recommendation if the recommendation’s practices could have plausibly affected outcomes but the recommendation’s practices were not considered by the panel as a critical part of the intervention.

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### **Recommendation 1. Monitor the progress of all students, and proactively intervene when students show early signs of attendance, behavior, or academic problems.**

#### **Level of evidence: Minimal Evidence**

WWC staff and the panel assigned a minimal level of evidence based on five studies that meet WWC group design standards without reservations<sup>168</sup> and one study that meets WWC pilot regression discontinuity standards with reservations<sup>169</sup> (see Table D.2). Two of these studies reported positive effects on outcomes in at least one of the three primary outcome domains,<sup>170</sup> and two of the three studies that examined outcomes in the graduating school domain found positive effects on high school graduation.<sup>171</sup> One of the two studies that found positive effects evaluate interventions that include components of other recommendations, so the effects cannot be attributed solely to practices related to this recommendation;<sup>172</sup> only one study tests the recommended practices without components of other recommendations, but this study only examines two of the four recommended steps.<sup>173</sup> The absence of a direct test of the full recommendation means the relationship between the supporting research and recommended practices is low, leading to a minimal level of evidence.

#### **Consistency of effects on relevant outcomes**

**Graduating school.** The studies related to this recommendation demonstrated a mix of positive and indeterminate effects in the graduating school domain. Three studies

supporting this recommendation examined graduation outcomes,<sup>174</sup> and two found positive effects.<sup>175</sup>

**Staying in school.** The studies supporting this recommendation found a mix of positive and indeterminate effects on outcomes in the staying in school domain. Five studies examined outcomes in the staying in school domain, one of which found positive effects<sup>176</sup> and four of which found indeterminate effects.<sup>177</sup> One study that found indeterminate effects examined an intervention that was a “low-intensity program,” according to the authors. In this study, the comparison group students also had access to similar services (such as counseling and academic tutoring support) as the intervention group.<sup>178</sup>

**Progressing in school.** The two studies that examined outcomes in the progressing in school domain found indeterminate effects.<sup>179</sup> One of the studies that reported indeterminate effects across all outcomes in this domain did find statistically significant positive effects for some cohorts and outcomes within the domain.<sup>180</sup> The other study is the “low-intensity program” described above as having indeterminate effects on staying in school.<sup>181</sup>

#### **Details about the supporting evidence (studies that demonstrate positive effects)**

The remaining paragraphs in this section describe the two studies that found positive effects in at least one outcome domain (i.e., the studies that contribute to the minimal level of evidence).<sup>182</sup>

**Internal validity of supporting evidence.** The studies supporting this recommendation have strong internal validity. One was a randomized controlled trial (RCT) with low sample attrition that meet WWC group design standards without reservations.<sup>183</sup> The other study was a regression discontinuity design that meets WWC pilot regression discontinuity standards with reservations for its reduced-form (intent-to-treat) estimates.<sup>184</sup>

**Relationship between the evidence and Recommendation 1.** Only one study examined the recommended practices without other intervention components, providing a direct test of the recommendation.<sup>185</sup> None of the studies tests all four steps of the recommendation or explicitly tests Steps 3 or 4. One study examines interventions that relate to Steps 1 and 2 (using data to identify students who are falling off track and intervene to help them).<sup>186</sup> The other study examines an intervention that is aligned with Step 2 (intervening with students who show signs of falling off track) but is only partially aligned with Step 1 (using teachers to informally track student progress and intervene as needed, which is somewhat different than the systematic tracking that Step 1 describes).<sup>187</sup>

**External validity of supporting evidence.** Both studies compared the recommended practices to regular classes and activities in traditional high schools. The length and intensity of the interventions varied, ranging from 45-minute daily sessions to practices integrated throughout the school day for 4 or 5 years. The grade levels in which the interventions were implemented spanned from 9th grade through high school completion and beyond.<sup>188</sup> One study took place in Chicago and had a sample population of nearly all black and Hispanic students with high levels of poverty (measured by the percentage of students participating in the free or reduced-price lunch program).<sup>189</sup> The other study was conducted in North Carolina, with a sample that was one-third minority, and with less than one-half qualified for free or reduced-price lunch.<sup>190</sup> Collectively, the studies demonstrate limited generalizability.

**Table D.2. Studies providing evidence for Recommendation 1**

| Study and design  | Participants and targeted grade range | Setting  | Intervention condition as implemented in the study   | Comparison condition as implemented in the study         | Outcome domain and effect size                          |
|---|---------------------------------------|--|--|--|---|
| <b>Meets WWC Group Design Standards Without Reservations</b>                                      |                                       |  |  |  |   |
| <b>Corrin et al. (2016)<sup>a</sup></b><br><i>Randomized controlled trial</i>                     | 30,230 6th- and 9th-grade students    | 59 schools across 11 urban school districts in the United States | Students participated in <i>Diplomas Now</i> , a schoolwide, multi-year intervention that included teacher teams and small learning communities, a college-readiness curriculum, coaching and professional development for teachers, tiered student support (early warning systems, academic and mentoring support, and case management), integrated on-site support (site coordinator, transformation facilitator, etc.), family and community involvement, and program staff training and development. | Students participated in regular classes and activities. | Progressing in school (cohort 1) = 0.05 <sup>b, c</sup> |
| <b>Dynarski et al. (1998) (Long Beach Up With Literacy)</b><br><i>Randomized controlled trial</i> | 97 middle school students             | 6 middle schools in Long Beach, California                       | Students participated in the <i>Up with Literacy</i> dropout prevention program that provided in-class and after-school tutoring and homework help along with enrichment activities. Service elements of the program included counseling, attendance monitoring, outreach to families, and accelerated learning.   | Students participated in regular classes and activities. | Staying in school (cohort 1) = 0 <sup>d</sup>           |

(continued)

Table D.2. Studies providing evidence for Recommendation 1 (continued)

| Study and design  | Participants and targeted grade range             | Setting  | Intervention condition as implemented in the study  | Comparison condition as implemented in the study  | Outcome domain and effect size   |
|---|---|--|---|---|--|
| <b>Edmunds et al. (2015)<sup>e, f</sup></b><br><i>Randomized controlled trial</i> | 1,594 high school students in grades 9–12 or 9–13 | 12 <i>Early College High Schools</i> in North Carolina | Students attended North Carolina <i>Early College High Schools</i> , which partnered with higher-education institutions and offered curricula that allowed students to complete both high school and associate’s degrees simultaneously. The schools focused on college readiness, high-quality teaching and learning, personal relationships between students and staff, high expectations, and staff commitment to a shared mission. <i>Early College High Schools</i> are small, autonomous schools that serve grades 9–12 or 9–13 (4 or 5 years). Teachers monitored students’ progress and actively intervened to provide extra assistance when students’ grades dropped or they fell off track.   | Students participated in regular classes and activities.  | Staying in school = 0.40 <sup>g</sup><br>Graduating school = 0.16 <sup>h</sup>             |
| <b>Heller et al. (2013)<sup>i, j</sup></b><br><i>Randomized controlled trial</i>  | 2,740 male students in grades 7–10                | 18 Chicago Public Schools middle and high schools      | Students participated in one of three intervention groups of the <i>Becoming a Man (BAM)</i> intervention: an in-school intervention group, an after-school intervention group, or both an in-school and an after-school intervention group. Consistent with the study, this practice guide combines these three intervention groups.<br><br>The in-school intervention consisted of 27 one-hour weekly sessions during the academic year. The sessions were offered in place of a traditional class during the school day. The instructors were college-educated and were not required to have specialized training. The curriculum components included elements of cognitive behavioral therapy.<br><br>The after-school intervention consisted of 1- to 2-hour sessions during the academic year. Each session included student participation in non-traditional sports and reflection on their behavior. The after-school coaches were trained in the intervention. | Students received regular classroom instruction. The authors noted that there was a high level of crossover in which some of the comparison students received the intervention. | Staying in school (2010–2011) = 0.15 <sup>k</sup><br>Graduating school = 0.19 <sup>l</sup> |
| <b>Heller et al. (2015)<sup>m, n</sup></b><br><i>Randomized controlled trial</i>  | 2,064 male 9th- and 10th-grade students           | 9 Chicago Public Schools high schools                  | Students participated in the <i>Becoming a Man (BAM)</i> program, which consisted of weekly 1-hour group sessions for 2 years. The sessions were led by “counselors,” college-educated men hired and trained to deliver the established curriculum. The sessions used cognitive behavioral therapy and included reflection, role-playing, skill-building, and stories and discussion. Over the 2-year program, students voluntarily participated in up to 45 sessions. The sessions took place during the school day, and the students missed class to attend the program. In addition, after-school sports programming was offered in 5 of the 9 schools during the first year only.   | Students participated in regular classes and school activities.   | Staying in school = 0.11 <sup>o</sup>  |

(continued)

Table D.2. Studies providing evidence for Recommendation 1 (continued)

| Study and design  | Participants and targeted grade range | Setting                                | Intervention condition as implemented in the study   | Comparison condition as implemented in the study   | Outcome domain and effect size  |
|---|---------------------------------------|--|--|--|---|
| <b>Meets WWC Group Design Standards With Reservations</b>                                     |                                       |  |  |  |   |
| <b>Cortes, Goodman, and Nomi (2015)<sup>p</sup></b><br><i>Regression discontinuity design</i> | 9,700<br>9th-grade students           | 73 Chicago Public Schools high schools | Students assigned to double-dose algebra received 90 minutes of math class every day for a full academic year. The first math course, regular algebra, consisted mostly of class lectures. The second math course, algebra with support or algebra problem-solving, focused on building math skills that students lacked. For most students, the second period of algebra replaced an optional class, such as music or art.<br><br>Teachers of double-dose algebra received two curricula called <i>Agile Mind</i> and <i>Cognitive Tutor</i> , standalone lesson plans, and three professional development workshops on using extra instructional time. | Students took one algebra course (45 minutes of daily instruction) during the school year. | Staying in school (~) <sup>q</sup><br>Progressing in school (+) <sup>r</sup><br>Graduating school (+) <sup>s</sup><br><i>Postsecondary enrollment (+<sup>g</sup>)<sup>j</sup></i> |

Notes:

All studies in this table meet WWC group design standards with or without reservations. Within each rating section, studies are listed alphabetically by first author.

Each row in this table represents a study, defined by the WWC as an examination of the effect of an intervention on a distinct sample. In some cases, multiple contrasts or studies were described in a single article. In these cases, the contrast or study that is most relevant to the recommendation is included in the table.

For studies that included multiple outcomes in a domain, reported effect sizes and statistical significance are for the domain and calculated as described in the *WWC Procedures and Standards Handbook 3.0* (pp. 25–26).

Several studies examined the dropout rate, which falls under the staying in school domain. These effect sizes were reported as negative in the studies. In this table, the signs of the effect sizes for staying in school are reversed for clarity. A plus sign (+) indicates that the intervention had a positive effect on staying in school (or a reduced dropout rate), meaning the intervention group had a higher rate of staying in school than the comparison group.

Italicized gray font is used for outcome domains (e.g., postsecondary enrollment) that are not directly related to dropout prevention and do not contribute to the level of evidence of this recommendation, but might be affected by dropout prevention practices and be of interest to educators and practitioners who are implementing these practices.

\* = statistically significant at the 0.05 level

~ = indeterminate effects

<sup>a</sup> This study is also used as evidence for Recommendation 2.

<sup>b</sup> The panel determined that the outcome “percentage of students who had no core course failures during the year” in the progressing in school domain was the most relevant to this guide. This is the only outcome included in this domain. The study also reports “percentage of core courses passed,” “percentage of students who had no math course failures during the year,” “percentage of students who had no ELA course failures during the year,” “percentage of students above the stability threshold,” and “percentage of students with no early warning indicators” in the progressing in school domain.

<sup>c</sup> The WWC-calculated effect size for the cohort 2 progressing in school outcome was 0.02 and not statistically significant.

<sup>d</sup> The “highest grade completed,” an outcome in the progressing in school domain, was also examined and meets standards, but the study does not provide sufficient information to assess the magnitude or significance of effects.

<sup>e</sup> This study is also used as evidence for Recommendations 3 and 4.

<sup>f</sup> The review of this study incorporates data from **Edmunds et al. (2011)**. The review also includes implementation information about the *Early College High School* intervention from Edmunds et al. (2010). In particular, Edmunds et al. (2010) describes how teachers actively monitored students and intervened when they fell off track, which aligns with Recommendation 1. This monitoring component of the intervention was not described in another study of the *Early College High School* initiative which met WWC group design standards, **Berger et al. (2013)**, and therefore, that study does not support Recommendation 1. None of the outcomes in Edmunds et al. (2010) meet eligibility requirements.

<sup>g</sup> The staying in school outcome reported in this table is from **Edmunds et al. (2011)**. The sample consisted of 718 students from 19 *Early College High Schools*. This sample overlaps with the sample included in **Edmunds et al. (2015)**.

<sup>h</sup> Five-year graduation rate.

<sup>i</sup> This study is also used as evidence for Recommendation 3.

<sup>j</sup> The review of this study included data from Study 1 in **Heller et al. (2015)**.

<sup>k</sup> The reported effect is the complier average causal effect (CACE) effect. The intent-to-treat (ITT) effect size is 0.06 and not statistically significant. The study also reported enrollment status, which falls under the staying in school domain, for the 2009/10 school year. The CACE effect was 0.27 and not statistically significant, and the ITT effect was 0.10 and not statistically significant.

<sup>l</sup> Four-year (“on-time”) graduation rate. The reported effect is the complier average causal effect (CACE) effect. The intent-to-treat (ITT) effect size is 0.08 and not statistically significant. The study also reports two other graduating school outcomes: graduating



high school by the 2014/15 school year, 4-7 years after starting 9th grade (CACE estimate is 0.14 and not statistically significant; ITT estimate is 0.06 and not statistically significant), and graduating school with transfers counted as graduates (CACE estimate is 0.22 and statistically significant; ITT estimate is 0.09 and statistically significant).

<sup>m</sup> This study is also used as evidence for Recommendation 3.

<sup>n</sup> The review of this study included only Study 2. Study 1 was reviewed in conjunction with **Heller et al. (2013)**, and Study 3 is ineligible.

<sup>o</sup> The reported effect is the complier average causal effect (CACE) effect in year 2. The intent-to-treat (ITT) effect size in year 2 is 0.06 and not statistically significant. The ITT and CACE effect sizes for staying in school in year 1 are 0.03 and 0.06, respectively, and not statistically significant.

<sup>p</sup> The reduced-form estimates, which are not reported in the study, meet standards with reservations. Although we do not know the magnitude of the reduced-form estimates, we know the direction of effects (positive or negative) and whether or not they are significant at the 0.05 level.

<sup>q</sup> The study examined three outcome measures in the staying in school domain, two of which were positive and not significant, and one of which was negative and not significant.

<sup>r</sup> The study examined four outcome measures in the progressing in school domain, one of which was positive and significant, and three of which were positive and not significant.

<sup>s</sup> The study examined 4-year and 5-year graduation rates in the graduating school outcomes; the 4-year graduation rate was positive and not significant, and the 5-year rate was positive and significant.

<sup>t</sup> The study examined three outcome measures in the postsecondary access and enrollment domain, all which were positive and significant.

### **Recommendation 2. Provide intensive, individualized support to students who have fallen off track and face significant challenges to success.**

#### **Level of evidence: Moderate Evidence**

WWC staff and the panel assigned a moderate level of evidence based on eight studies that meet WWC group design standards without reservations (see Table D.3).<sup>191</sup> Four of these studies reported positive effects for outcomes in at least one of the three primary outcome domains,<sup>192</sup> and two of the three studies that examined outcomes in the graduating school domain found positive effects on high school graduation.<sup>193</sup> Two of the four studies that found positive effects evaluate interventions that are closely aligned with all of the recommendation's steps and do not include components of other recommendations; these studies provide a direct test of the recommendation.<sup>194</sup> The strong internal and external validity of supporting studies, and the preponderance of positive effects among studies that provide a direct test of the recommendation, indicate a moderate level of evidence.

### **Consistency of effects on relevant outcomes**

**Graduating school.** The studies related to this recommendation demonstrated consistent positive effects in the graduating school domain. Two of the three studies that examined outcomes in this domain found positive effects.<sup>195</sup>

**Staying in school.** The studies supporting the recommendation found both positive and indeterminate effects in the domains of staying in school and progressing in school. No negative effects were found in either domain. Two studies found positive effects on outcomes in the staying in school domain,<sup>196</sup> while two studies found indeterminate effects in this domain.<sup>197</sup> One of the studies that found indeterminate effects on staying in school also found positive effects on graduation.<sup>198</sup> The other study that found indeterminate effects on the longest-term measure of staying in school found positive effects on measures of staying in school with shorter-term observation periods (this study did not examine outcomes in the graduating school domain).<sup>199</sup>

**Progressing in school.** One study found positive effects in the progressing in school domain,<sup>200</sup> and two studies found indeterminate effects in this domain.<sup>201</sup> One of the studies that reported indeterminate overall effects in the progressing in school domain

did find positive effects for some cohorts and outcomes.<sup>202</sup> The other study that found indeterminate effects examined an intervention that the panel believes did not provide sufficient support to students (an average of 16 contact hours).<sup>203</sup>

**Details about the supporting evidence (studies that demonstrate positive effects)**

The remaining paragraphs in this section describe the four studies that found positive effects in at least one domain (i.e., the studies that contribute to the moderate level of evidence).

**Internal validity of supporting evidence.**

The studies supporting this recommendation have strong internal validity. All four studies were RCTs with low sample attrition that meet WWC group design standards without reservations.<sup>204</sup>

**Relationship between the evidence and Recommendation 2.**

The studies supporting this recommendation examine interventions that are closely aligned with all steps of Recommendation 2. Two of the four studies examine interventions that do not include other intervention components and provide a direct test of the recommendation.<sup>205</sup>

**External validity of supporting evidence.**

The four studies supporting this recommendation compared the recommended practices to regular classes and activities in traditional high schools. The study participants were students who were identified as at risk for dropping out. In all five studies, the majority of students are racial/ethnic minorities and are from districts across the United States. The length and intensity of the interventions varied, ranging from 1 year to 5 years, with up to 750 contact hours each year for 5 years. The studies included participants in grades 7–12, either in middle school or high school settings.

**Table D.3. Studies providing evidence for Recommendation 2**

| Study and design  | Participants and targeted grade range    | Setting   | Intervention condition as implemented in the study  | Comparison condition as implemented in the study   | Outcome domain and effect size                          |
|---|--|---|---|--|---|
| <b>Meets WWC Group Design Standards Without Reservations</b>                  |  |   |   |  |   |
| <b>Corrin et al. (2015)</b><br><i>Randomized controlled trial</i>             | 2,048 students in middle and high school | 28 Title I middle and high schools in North Carolina, South Carolina, and Texas | Students received individualized support services from <i>Communities in Schools</i> site coordinators. Student services fell under eight categories: academic, behavioral, attendance, social/life skills, basic needs/resources, college/career preparation, enrichment/motivation, and family related. Students were assessed annually to determine the intensity and duration of their case management. On average, students were enrolled in case management for 30 weeks and received 19.4 service contacts and 16.2 service hours during the year. | Students had access to the regular student support available in their schools, which varied widely across schools. | Progressing in school = -0.06                           |
| <b>Corrin et al. (2016)<sup>a</sup></b><br><i>Randomized controlled trial</i> | 30,230 6th- and 9th-grade students       | 59 schools across 11 urban school districts in the United States                | Students participated in <i>Diplomas Now</i> , a schoolwide, multi-year intervention that included teacher teams and small learning communities, a college-readiness curriculum, coaching and professional development for teachers, tiered student support (early warning systems, academic and mentoring support, and case management), integrated on-site support (site coordinator, transformation facilitator, etc.), family and community involvement, and program staff training and development.  | Students participated in regular classes and activities.   | Progressing in school (cohort 1) = 0.05 <sup>b, c</sup> |

(continued)

Table D.3. Studies providing evidence for Recommendation 2 (continued)

| Study and design   | Parti-<br>pants and<br>targeted<br>grade range                                | Setting   | Intervention condition as implemented<br>in the study  | Comparison<br>condition as<br>implemented<br>in the study                            | Outcome<br>domain and<br>effect size  |
|--|---|---|--|--|---|
| <b>Dynarski et al. (1998) (Boston JFY High School)<sup>d</sup></b><br><i>Randomized controlled trial</i>         | 212 high school students  | 3 alternative high schools in Boston, Massachusetts | Students attended alternative high schools that provided a competency-based curriculum and enhanced social services, including career awareness, accelerated learning, and counseling services. Students received individualized course schedules tailored to their needs, flexible schedules, and childcare. The schools were smaller than typical urban high schools and in a separate facility from other high schools in the district.   | Students participated in regular classes and activities at traditional high schools. | Staying in school (cohort 1, year 2) = -0.17<br>Graduating school (cohort 1, year 2) = 0.25 <sup>e</sup><br><i>Completing school (GED only, cohort 1, year 2) = -0.09</i>                           |
| <b>Dynarski et al. (1998) (Las Vegas Horizon High Schools)<sup>f</sup></b><br><i>Randomized controlled trial</i> | 399 9th- and 10th-grade students  | 4 alternative high schools in Las Vegas, Nevada     | The students attended alternative high schools, which offered individualized academic plans for each student. Students participated in cooperative learning, small-group instruction, and hands-on experiences. They also received support services and childcare as needed.   | Students participated in regular classes and activities at traditional high schools. | Staying in school (cohort 1, year 3) = 0.25 <sup>g</sup><br>Graduating school (cohort 1, year 3) = 0.95 <sup>h,i</sup><br><i>Completing school (GED only, cohort 1, year 3) = -0.12<sup>j</sup></i> |
| <b>Larson and Rumberger (1995)<sup>k</sup></b><br><i>Randomized controlled trial</i>                             | 94 Mexican-American junior high school students in grades 7 to 9 <sup>l</sup> | Los Angeles, California                             | Students participated in the <i>Achievement for Latinos through Academic Success (ALAS)</i> program, a multi-pronged intervention that focused on Latino adolescents. School and program staff implemented the intervention, which lasted for all 3 years of junior high school (grades 7–9). Students participated in social metacognitive problem-solving training, counseling, recognition and bonding activities, and enhancement of school affiliation. The school monitored student attendance and provided frequent feedback to students and parents. The parents were trained in parent-child problem-solving and school participation. Community agencies for youth and family services also participated in the program. | Students participated in the regular junior high school program.                     | Staying in school (end of 11th grade) = 0.24 <sup>m</sup>   |

(continued)

Table D.3. Studies providing evidence for Recommendation 2 (continued)

| Study and design   | Participants and targeted grade range | Setting  | Intervention condition as implemented in the study  | Comparison condition as implemented in the study  | Outcome domain and effect size  |
|--|---------------------------------------|--|---|---|---|
| <p><b>Rodríguez-Planas (2012)<sup>n</sup></b><br/><i>Randomized controlled trial</i></p>       | 1,008 high school students            | 11 schools across 7 locations in the United States: Cleveland, Ohio; Washington, DC; Fort Worth, Texas; Houston, Texas; Memphis, Tennessee; Philadelphia, Pennsylvania; and Yakima, Washington | Students in the <i>Quantum Opportunity Program (QOP)</i> received a range of social, academic, and employment supports. Students participated in up to 750 hours of activities after school and on weekends each year for 5 years. (Students who graduated high school in 4 years received mentoring and assistance with college enrollment during the fifth year.) Program activities included anger-management and family-planning discussions, academic tutoring and planning, community service, and pre-employment training. Students were also offered financial incentives to actively participate in the program. | Students participated in regular classes and school activities. Some of the comparison group students attended the same schools as <i>QOP</i> participants. | <p>Graduating school (late teens) = 0.13<sup>o</sup></p> <p><i>Completing school (late teens)</i> = -0.08<sup>p</sup></p> <p><i>Postsecondary access and enrollment (mid-20s)</i> = 0.15<sup>q</sup></p> <p><i>Postsecondary credit accumulation (mid-20s)</i> = (+)<sup>r</sup></p> <p><i>Postsecondary attainment (mid-20s)</i> = 0.12<sup>s</sup></p> <p><i>Labor market (mid-20s)</i> = (-)<sup>t</sup></p> |
| <p><b>Sinclair et al. (1998)</b><br/><i>Randomized controlled trial</i></p>                    | 92 9th grade students                 | Urban school district in the northern Midwest United States  | Students in the <i>Check &amp; Connect</i> program had their attendance, behavior, and academic performance monitored on a daily basis. Participants were also assigned a “monitor” who functioned as a mentor and case worker and stayed with the student even if he or she transferred to another school within the district. Monitors intervened with the student as soon as an attendance, performance, or behavior problem arose and worked with them to address the underlying causes. The intervention lasted 1 school year (9th grade).   | Students received <i>Check &amp; Connect</i> services in 7th and 8th grade, but stopped receiving them when they entered 9th grade.                         | Progressing in school = 0.83 <sup>*</sup>   |
| <p><b>Sinclair, Christenson, and Thurlow (2005)</b><br/><i>Randomized controlled trial</i></p> | 144 high school students              | 7 schools in 1 school district in Minneapolis, Minnesota   | Students in the <i>Check &amp; Connect</i> program had their attendance, behavior, and academic performance monitored on a regular basis. Each participant was also assigned a “monitor” who functioned as a mentor and case worker and stayed with the student even if he or she transferred to another school within the district. Monitors intervened with the students as soon as an attendance, performance, or behavior problem arose and worked with them to address the underlying causes. Participating students kept the same monitor throughout their high school career.                                      | Students participated in regular classes and activities and did not receive <i>Check &amp; Connect</i> services.  | <p>Staying in school = 0.46<sup>su</sup></p> <p><i>Completing school</i> = 0.03</p>   |

Notes:

All studies in this table meet WWC group design standards without reservations. Within each rating section, studies are listed alphabetically by first author.

Each row in this table represents a study, defined by the WWC as an examination of the effect of an intervention on a distinct sample. In some cases, multiple contrasts or studies were described in a single article. In these cases, the contrast or study that is most relevant to the recommendation is included in the table.

For studies that included multiple outcomes in a domain, reported effect sizes and statistical significance are for the domain and calculated as described in the *WWC Procedures and Standards Handbook 3.0* (pp. 25–26).

Several studies examined the dropout rate, which falls under the staying in school domain. These effect sizes were reported as negative in the studies. In this table, the signs of the effect sizes for staying in school are reversed for clarity. A plus sign (+) indicates that

## Appendix D (continued)

the intervention had a positive effect on staying in school (or a reduced dropout rate), meaning the intervention group had a higher rate of staying in school than the comparison group.

Italicized gray font is used for outcome domains (e.g., completing school, postsecondary credit accumulation, postsecondary attainment, and labor market participation) that are not directly related to dropout prevention and do not contribute to the level of evidence of this recommendation, but might be affected by dropout prevention practices and be of interest to educators and practitioners who are implementing these practices.

\* = statistically significant at the 0.05 level

~ = indeterminate effects

<sup>a</sup> This study is also used as evidence for Recommendation 1.

<sup>b</sup> The panel determined that the outcome “percentage of students who had no core course failures during the year” in the progressing in school domain was the most relevant to this guide. This is the only outcome included in this domain. The study also reports “percentage of core courses passed,” “percentage of students who had no math course failures during the year,” “percentage of students who had no ELA course failures during the year,” “percentage of students above the stability threshold,” and “percentage of students with no early warning indicators” in the progressing in school domain.

<sup>c</sup> The WWC-calculated effect size for the cohort 2 progressing in school outcome was 0.02 and not statistically significant.

<sup>d</sup> This study is also used as evidence for Recommendations 3 and 4.

<sup>e</sup> Graduation rate 2 years after the start of the program; students were 18 years old on average upon entering the program.

<sup>f</sup> This study is also used as evidence for Recommendation 4.

<sup>g</sup> The study also reports the dropout rate under the staying in school domain for cohorts 1 and 2 in year 2 of the program: the effect was 0.22 and statistically significant.

<sup>h</sup> Graduation rate 3 years after the start of the program; students were 15–16 years old upon entering the program.

<sup>i</sup> The study also reports the graduation rate under the graduating school domain for cohorts 1 and 2 in year 2 of the program. However, the WWC cannot calculate an effect size when the mean of one group (in this case, the intervention group) is 0.

<sup>j</sup> The study also reports the GED completion rate under the completing school domain for cohorts 1 and 2 in year 2 of the program: the effect was 0.43 and not statistically significant.

<sup>k</sup> This study was reviewed in conjunction with Rumberger and Larson (1992).

<sup>l</sup> Demographic information is reported only if the intervention was designed for and administered to a specific group of students.

<sup>m</sup> The study reported staying in school outcomes for two other time periods: the end of 8th grade (0.79) and the end of 9th grade (1.34). Both were statistically significant.

<sup>n</sup> This study was reviewed in conjunction with Schirm, Stuart, and McKie (2006).

<sup>o</sup> Graduation rate, based on survey of students in their late teens. This graduation outcome most comparable to the 4-year graduation rate reported in other studies.

<sup>p</sup> The study examined one outcome measure in the completing school domain, based on a survey of students in their late teens.

<sup>q</sup> The study examined two outcome measures in the postsecondary access and enrollment domain, based on a survey of students in their mid-twenties.

<sup>r</sup> The study examined two outcome measures in the postsecondary credit accumulation domain, based on a survey of students in their mid-twenties. The author did not report the effect sizes, and the WWC was able to calculate the effect size for only one of the measures, which was 0.19 and statistically significant (the author also reported that this effect was statistically significant). The WWC did not have sufficient information to calculate an effect size or assess statistical significance for the other measure in this domain, so could not calculate a domain average. The table indicates that the effect was positive based on the measure that the WWC could calculate.

<sup>s</sup> The study examined whether students obtained a bachelor's or associate's degree in the postsecondary attainment domain, based on a survey of students in their mid-twenties.

<sup>t</sup> The study examined four outcome measures in the labor market domain, based on a survey of students in their mid-twenties. The author did not report the effect sizes, and the WWC was able to calculate the effect size for only one of the measures, which was 0.02 and not statistically significant (the author also reported that this effect was not statistically significant). The WWC did not have sufficient information to calculate an effect size or assess statistical significance for the other measures in this domain, so could not calculate a domain average. The table indicates that the effect was indeterminate based on the measure that the WWC could calculate.

<sup>u</sup> The staying in school outcome includes only the cohort dropout rate. The study also reports whether students are still enrolled in year 4 (the effect was 0.61 and statistically significant) and the 5-year completion rate (the effect was 0.11 and not statistically significant).

### **Recommendation 3. Engage students by offering curricula and programs that connect schoolwork with college and career success and that improve students' capacity to manage challenges in and out of school.**

#### **Level of evidence: Strong Evidence**

WWC staff and the panel assigned a strong level of evidence based on 11 studies that meet WWC group design standards without reservations<sup>206</sup> and three studies that meet WWC group design standards with reservations (see Table D.4).<sup>207</sup> Nine of these studies reported positive effects for outcomes in at least one of the three primary outcome domains,<sup>208</sup> and seven of the eight studies that examined outcomes in the graduating school domain found positive effects on high school graduation.<sup>209</sup> Four of the studies that found positive effects evaluate interventions that are closely aligned with all of the recommendation's steps and do not include components of other recommendations; these studies provide a direct test of the recommendation.<sup>210</sup> The consistent positive effects—including in studies that provide a direct test of the recommended practices—as well as the high internal and external validity of the studies supporting this recommendation, indicate a strong level of evidence.

#### **Consistency of effects on relevant outcomes.**

**Graduating school.** The studies related to this recommendation demonstrated consistent positive effects in the graduating school domain. Seven of the eight studies that examined outcomes in this domain found positive effects on high school graduation.<sup>211</sup>

**Staying in school.** Eleven studies reported outcomes in the staying in school domain,<sup>212</sup> five of which found positive effects.<sup>213</sup> Four of the six studies that found indeterminate or negative effects in the staying in school domain were part of a single report on multiple sites,

and the authors indicated that these were “low-intensity programs,” not the more intensive panel-recommended practices.<sup>214</sup>

**Progressing in school.** One study found positive effects in the progressing in school domain.<sup>215</sup> One study found indeterminate effects<sup>216</sup> in this domain, but it also found positive effects on staying in school.

#### **Details about the supporting evidence (studies that demonstrate positive effects)**

The remaining paragraphs in this section describe the nine studies that found positive effects in at least one domain (i.e., the studies that contribute to the strong level of evidence).

#### **Internal validity of supporting evidence.**

The studies supporting this recommendation have strong internal validity. Six studies were RCTs with low sample attrition that meet WWC group design standards without reservations.<sup>217</sup> One study was an RCT with high sample attrition that demonstrates baseline equivalence and meets WWC group design standards with reservations.<sup>218</sup> Two studies were quasi-experimental designs (QEDs) that meet WWC group design standards with reservations.<sup>219</sup>

#### **Relationship between the evidence and Recommendation 3.**

Five studies supporting this recommendation examine interventions that do not contain other intervention components, providing a direct test of the recommendation.<sup>220</sup> The other four studies examine interventions that contain components that are critical to Recommendation 3, but are also related to other recommendations.<sup>221</sup>

#### **External validity of supporting evidence.**

Eight studies compared the recommended practices to regular classes and activities in traditional middle and high schools,<sup>222</sup> and one study compared the recommended practices to less intensive workshops.<sup>223</sup> The

length and intensity of the interventions varied, ranging from 27 one-hour weekly sessions to practices integrated throughout the school day for 4 or 5 years. The grade levels in which the interventions were implemented spanned from 7th grade through high school

completion and beyond.<sup>224</sup> Collectively, the study samples represent a diverse group of participants that includes middle and high school students from schools across the United States.

**Table D.4. Studies providing evidence for Recommendation 3**

| Study and design   | Participants and targeted grade range | Setting   | Intervention condition as implemented in the study   | Comparison condition as implemented in the study                                     | Outcome domain and effect size  |
|--|---------------------------------------|---|--|--|---|
| <b>Meets WWC Group Design Standards Without Reservations</b>   |                                       |   |  |  |   |
| <b>Berger et al. (2013)<sup>a</sup></b><br><i>Randomized controlled trial</i>                                      | 2,458 high school students            | 10 <i>Early College High Schools</i> in 5 states (urban areas, mid-sized cities, and small towns) | Students attended <i>Early College High Schools</i> , which partnered with higher-education institutions and offered curricula that allowed students to complete high school and obtain college credits simultaneously. The schools focused on college readiness and preparation, as well as personalized and comprehensive supports to students. <i>Early College High Schools</i> are small, autonomous schools that serve grades 9–12 or 9–13 (4 or 5 years). Eight of the 10 schools were located on college campuses. | Students participated in regular classes and activities at traditional high schools. | Graduating school = 0.22 <sup>*b</sup>  |
| <b>Dynarski et al. (1998) (Albuquerque Middle School Leadership Program)</b><br><i>Randomized controlled trial</i> | 290 8th-grade students                | 4 middle schools in Albuquerque, New Mexico   | Students participated in the Albuquerque Middle School leadership program, a weekly workshop designed to build student self-esteem, academic skills, and/or leadership skills.   | Students participated in regular classes and activities.                             | Staying in school (cohorts 1 and 2) = -0.33 <sup>c</sup>  |
| <b>Dynarski et al. (1998) (Boston JFY High School)<sup>d</sup></b><br><i>Randomized controlled trial</i>           | 212 high school students              | 3 alternative high schools in Boston, Massachusetts   | Students attended alternative high schools that provided a competency-based curriculum and enhanced social services, including career awareness, accelerated learning, and counseling services. Students received individualized course schedules tailored to their needs, flexible schedules, and childcare. The schools were smaller than typical urban high schools and in a separate facility from other high schools in the district.   | Students participated in regular classes and activities at traditional high schools. | Staying in school (cohort 1, year 2) = -0.17<br>Graduating school (cohort 1, year 2) = 0.25 <sup>e</sup><br><i>Completing school (GED only, cohort 1, year 2) = -0.09</i> |

(continued)

Table D.4. Studies providing evidence for Recommendation 3 (continued)

| Study and design   | Participants and targeted grade range                | Setting   | Intervention condition as implemented in the study   | Comparison condition as implemented in the study   | Outcome domain and effect size   |
|--|--|---|--|--|--|
| <b>Dynarski et al. (1998) (Rockford Early Identification and Intervention Project)</b><br><i>Randomized controlled trial</i> | 554 students in grades 6–8                           | 4 middle schools in Rockford, Illinois  | Students in the <i>Early Identification and Intervention Project</i> enrolled in a daily class focused on building self-esteem, academic skills, and leadership skills. The intervention also provided support services such as family outreach and counseling. One counselor, assigned to 75 participants, implemented the program in each school.  | Students participated in regular classes and activities.   | Staying in school (cohorts 1 and 2) = 0.10 <sup>f</sup>                          |
| <b>Dynarski et al. (1998) (Sweetwater Twelve Together Program)</b><br><i>Randomized controlled trial</i>                     | 466 middle school students                           | 9 public middle schools in the Sweetwater Union high school district of Chula Vista, California | Students participated in the Sweetwater/Chula Vista <i>Twelve Together</i> program, which offered weekly meetings facilitated by adult volunteers, counseling, attendance monitoring, and an annual weekend retreat. The program focused on building self-esteem, academic skills, or leadership skills.   | Students participated in regular classes and activities.   | Staying in school (cohorts 1 and 2) = 0.09 <sup>g</sup>                          |
| <b>Edmunds et al. (2015)<sup>h, i</sup></b><br><i>Randomized controlled trial</i>  | 1,594 high school students in grades 9–12 or 9–13    | 12 <i>Early College High Schools</i> in North Carolina  | Students attended North Carolina <i>Early College High Schools</i> , which partnered with higher-education institutions and offered curricula that allowed students to complete both high school and associate’s degrees simultaneously. The schools focused on college readiness, high-quality teaching and learning, personal relationships between students and staff, high expectations, and staff commitment to a shared mission. <i>Early College High Schools</i> are small, autonomous schools that serve grades 9–12 or 9–13 (4 or 5 years). Teachers monitored students’ progress and actively intervened to provide extra assistance when students’ grades dropped or they fell off track.  | Students participated in regular classes and activities.   | Staying in school = 0.40 <sup>sj</sup><br>Graduating school = 0.16 <sup>sk</sup> |
| <b>Gonzales et al. (2014)</b><br><i>Randomized controlled trial</i>  | 420 Mexican-American 7th-grade students <sup>l</sup> | 4 urban middle schools in the Southwestern United States  | Students in the <i>Puentes (Bridges)</i> program participated in 2-hour weekly sessions for 9 weeks, and their families received 2 home visits. The student sessions focused on increasing students’ abilities to imagine future possible selves, self-regulate, and develop coping strategies. They also sought to promote positive engagement with family members and peers to support the adolescents’ learning goals and school success. The family sessions focused on parenting strategies, improvement of parent–child communication, positive reinforcement, and schoolwork monitoring, all to facilitate school success. Parents also received information on the expectations of the school and strategies for effective parent–teacher communication. | Students and their parents participated in one 1.5-hour workshop. Students and parents received handouts on school resources, discussed challenges to school success, and developed their own plans to support school success. | Staying in school = 0.54 <sup>*</sup>  |

(continued)



Table D.4. Studies providing evidence for Recommendation 3 (continued)

| Study and design   | Partici - pants and targeted grade range | Setting   | Intervention condition as implemented in the study   | Comparison condition as implemented in the study  | Outcome domain and effect size  |
|--|--|---|--|---|---|
| <b>Heller et al. (2013)<sup>m, n</sup></b><br><i>Randomized controlled trial</i> | 2,740 male students in grades 7–10       | 18 Chicago Public Schools middle and high schools | <p>Students participated in one of three intervention groups of the <i>Becoming a Man (BAM)</i> intervention: an in-school intervention group, an after-school intervention group, or both an in-school and an after-school intervention group. Consistent with the study, this practice guide combines these three intervention groups.</p> <p>The in-school intervention consisted of 27 one-hour weekly sessions during the academic year. The sessions were offered in place of a traditional class during the school day. The instructors were college-educated and were not required to have specialized training. The curriculum components included elements of cognitive behavioral therapy.</p> <p>The after-school intervention consisted of 1- to 2-hour sessions during the academic year. Each session included student participation in non-traditional sports and reflection on their behavior. The after-school coaches were trained in the intervention.</p> | Students received regular classroom instruction. The authors noted that there was a high level of crossover in which some of the comparison students received the intervention. | <p>Staying in school (2010–2011) = 0.15<sup>o</sup></p> <p>Graduating school = 0.19<sup>p</sup></p> |
| <b>Heller et al. (2015)<sup>q, r</sup></b><br><i>Randomized controlled trial</i> | 2,064 male 9th- and 10th-grade students  | 9 Chicago Public Schools high schools             | <p>Students participated in the <i>Becoming a Man (BAM)</i> program, which consisted of weekly 1-hour group sessions for 2 years. The sessions were led by “counselors,” college-educated men hired and trained to deliver the established curriculum. The sessions used cognitive behavioral therapy and included reflection, role-playing, skill-building, and stories and discussion. Over the 2-year program, students participated in up to 45 sessions. (Attendance was not mandatory.) The sessions took place during the school day, and the students missed class to attend the program. In addition, after-school sports programming was offered in 5 of the 9 schools during the first year only.</p>   | Students participated in regular classes and school activities.   | Staying in school = 0.11 <sup>s</sup>   |
| <b>Johnson, Simon, and Mun (2014)</b><br><i>Randomized controlled trial</i>      | 268 9th-grade students                   | 1 urban high school in a Mid-Atlantic state       | <p>Each student was assigned to a peer leader upon entering 9th grade. Peer leaders were 12th-grade students, and each was assigned to 12 freshmen. The peer leaders met with their groups of freshmen for 40-minute sessions weekly, during school hours, throughout the participants’ freshmen year. During these weekly group sessions, participants practiced academic, social and emotional skills, critical thinking, goal setting, decision-making, time management, teamwork, and communication via hands-on activities. Three 2.5-hour booster sessions were conducted during participants’ sophomore year.</p>   | Students participated in regular classes and school activities.   | Graduating school = 0.27 <sup>t</sup>   |

(continued)

Table D.4. Studies providing evidence for Recommendation 3 (continued)

| Study and design  | Participants and targeted grade range     | Setting  | Intervention condition as implemented in the study   | Comparison condition as implemented in the study   | Outcome domain and effect size  |
|---|---|--|--|--|---|
| <p><b>Kemple (2001)<sup>u, v</sup></b><br/><i>Randomized controlled trial</i></p>   | 1,510 9th- or 10th-grade students         | 10 schools in 9 cities in the United States: Pittsburgh, Pennsylvania; Baltimore, Maryland; Washington, DC; Miami Beach, Florida; Cocoa, Florida; Socorro, Texas; Santa Ana, California; Watsonville, California; and San Jose, California | Students in <i>Career Academies</i> were part of small learning communities within larger high schools (school-within-a-school model). In each community, there were 3–5 teachers and 50–75 students per grade in grades 9–12 or 10–12. Students took 2 to 4 courses per year in their academy, which focused on a career theme based on local employment needs. The schools established partnerships with employers who provided financial support, internships, and mentoring. Teachers were supported with professional development, and the academy curricula focused on helping students meet core academic requirements for graduation and college preparation.  | Most students attended regular classes within the same high schools, but some who were not selected for the <i>Career Academies</i> elected to attend magnet schools or other options. | <p>Staying in school = 0.14*</p> <p>Progressing in school = 0.09</p> <p><i>Completing school (2004)</i> = 0.07<sup>v</sup></p> <p><i>Postsecondary access and enrollment (2000)</i> = 0.05</p> <p><i>Labor market (2000)</i> = 0.09</p> |
| <b>Meets WWC Group Design Standards With Reservations</b>   |   |  |  |  |   |
| <p><b>Luna and Fowler (2011)</b><br/><i>Quasi-experimental design</i></p>   | 120 students in grades 10–12              | 3 high schools in a large district in Arizona  | Students participated in the <i>Achieving a College Education (ACE) Plus</i> program. They concurrently enrolled in high school and a local community college. Participants were selected during the spring of grade 9.  | Students in the comparison condition attended the same high schools but did not enroll in community college.   | <p>Staying in school = 0.86*</p> <p>Graduating school = 0.55<sup>*x</sup></p> <p><i>Postsecondary access and enrollment</i> = 0.67*</p>   |
| <p><b>Neild, Boccanfuso, and Byrnes (2015)</b><br/><i>Randomized controlled trial that needs to demonstrate equivalence</i></p> | 3,629 high school students in grades 9–12 | 5 career and technical-education schools in Philadelphia, Pennsylvania   | Students attended one of five career and technical-education schools. These schools provided both traditional and career-related educational coursework. Four of these schools focused the career coursework on locally in-demand fields, such as auto repair and child-care, while the fifth focused on agriculture and animal care.  | Students attended traditional public high schools beginning in 9th grade.  | <p>Graduating school = 0.11<sup>*y</sup></p> <p>Progressing in school = 0.09*</p>   |
| <p><b>Warner et al. (2015)<sup>z, aa</sup></b><br/><i>Quasi-experimental design</i></p>   | 14,304 high school students               | High schools in 8 school districts in California: Antioch, Long Beach, Los Angeles, Oakland, Pasadena, Porterville, Sacramento City, and West Contra Costa   | Students enrolled in a <i>Linked Learning</i> career pathways program, which consisted of comprehensive programs of study within schools that combined classroom learning with real-world applications outside of school. The <i>Linked Learning</i> approach had four main components: (1) rigorous academics, (2) career-technical education, (3) work-based learning, and (4) comprehensive support services. Pathway teams of teachers and staff worked together to establish communities and provide individualized support to students. Students enrolled in a pathway beginning in 9th or 10th grade and continued their enrollment until the end of high school. To become a <i>Linked Learning</i> career pathway, a program had to be certified by one of two organizations, ConnectEd or the National Academy Foundation (NAF). | Students participated in traditional high school programs.   | <p>Staying in school = 0.17*</p> <p>Graduating school = 0.16<sup>*bb</sup></p>  |

### Notes:

All studies in this table meet WWC group design standards with or without reservations. Within each rating section, studies are listed alphabetically by first author.

Each row in this table represents a study, defined by the WWC as an examination of the effect of an intervention on a distinct sample. In some cases, multiple contrasts or studies were described in a single article. In these cases, the contrast or study that is most relevant to the recommendation is included in the table.

For studies that included multiple outcomes in a domain, reported effect sizes and statistical significance are for the domain and calculated as described in the *WWC Procedures and Standards Handbook 3.0* (pp. 25–26).

Several studies examined the dropout rate, which falls under the staying in school domain. These effect sizes were reported as negative in the studies. In this table, the signs of the effect sizes for staying in school are reversed for clarity. A plus sign (+) indicates that the intervention had a positive effect on staying in school (or a reduced dropout rate), meaning the intervention group had a higher rate of staying in school than the comparison group.

Italicized gray font is used for outcome domains (e.g., completing school, postsecondary access and enrollment, and labor market participation) that are not directly related to dropout prevention and do not contribute to the level of evidence of this recommendation, but might be affected by dropout prevention practices and be of interest to educators and practitioners who are implementing these practices.

\* = statistically significant at the 0.05 level

<sup>a</sup> This study is also used as evidence for Recommendation 4. Although another study on the *Early College High School* initiative, **Edmunds et al. (2015)**, supports Recommendations 1, 3, and 4, **Berger et al. (2013)** does not include any information on teachers monitoring students, and therefore does not support Recommendation 1.

<sup>b</sup> Overall graduation rate over the course of the study, which represents a different amount of time between 9th-grade enrollment and outcome measurement for each cohort. Cohort 1's graduation rate is measured 6 years after enrolling in 9th grade; Cohort 2's graduation rate is measured 5 years after enrolling in 9th grade; and Cohort 3's graduation rate is measured 4 years after enrolling in 9th grade.

<sup>c</sup> The "highest grade completed," an outcome in the progressing in school domain, was also examined and meets standards, but the study does not provide sufficient information to assess the magnitude or significance of effects.

<sup>d</sup> This study is also used as evidence for Recommendations 2 and 4.

<sup>e</sup> Graduation rate 2 years after the start of the program; students were 18 years old on average upon entering the program.

<sup>f</sup> The "highest grade completed," an outcome in the progressing in school domain, was also examined and meets standards, but the study does not provide sufficient information to assess the magnitude or significance of effects.

<sup>g</sup> The "highest grade completed," an outcome in the progressing in school domain, was also examined and meets standards, but the study does not provide sufficient information to assess the magnitude or significance of effects.

<sup>h</sup> This study is also used as evidence for Recommendations 1 and 4.

<sup>i</sup> The review of this study incorporates data from **Edmunds et al. (2011)** and information from Edmunds et al. (2010). None of the outcomes in Edmunds et al. (2010) meet eligibility requirements.

<sup>j</sup> The staying in school outcome reported in this table is from **Edmunds et al. (2011)**. The sample consisted of 676 students from 19 *Early College High Schools*. This sample overlaps with the sample included in **Edmunds et al. (2015)**.

<sup>k</sup> Five-year graduation rate.

<sup>l</sup> Demographic information is reported only if the intervention was designed for and administered to a specific group of students.

<sup>m</sup> This study is also used as evidence for Recommendation 1.

<sup>n</sup> The review of this study included data from Study 1 in **Heller et al. (2015)**.

<sup>o</sup> The reported effect is the complier average causal effect (CACE) effect. The intent-to-treat (ITT) effect size is 0.06 and not statistically significant. The study also reported enrollment status, which falls under the staying in school domain, for the 2009/10 school year. The CACE effect was 0.27 and not statistically significant, and the ITT effect was 0.10 and not statistically significant.

<sup>p</sup> Four-year ("on-time") graduation rate. The reported effect is the complier average causal effect (CACE) effect. The intent-to-treat (ITT) effect size is 0.08 and not statistically significant. The study also reports two other graduating school outcomes: graduating high school by the 2014/15 school year, 4-7 years after starting 9th grade (CACE estimate is 0.14 and not statistically significant; ITT estimate is 0.06 and not statistically significant), and graduating school with transfers counted as graduates (CACE estimate is 0.22 and statistically significant; ITT estimate is 0.09 and statistically significant).

<sup>q</sup> This study is also used as evidence for Recommendation 1.

<sup>r</sup> The review of this study included only Study 2. Study 1 was reviewed in conjunction with **Heller et al. (2013)**, and Study 3 is ineligible.

<sup>s</sup> The reported effect is the complier average causal effect (CACE) effect. The intent-to-treat (ITT) effect size is 0.06 and not statistically significant. The ITT and CACE effect sizes for staying in school in year 1 are 0.03 and 0.06, respectively, and not statistically significant.

<sup>t</sup> Four-year (on-time) graduation rate.

<sup>u</sup> This study is also used as evidence for Recommendation 4.

<sup>v</sup> This study was reviewed in conjunction with Kemple (1997), Kemple (2004), Kemple (2008), Kemple and Rock (1996), Kemple and Snipes (2000), and Kemple and Willner (2008).

<sup>w</sup> The study reported completing school outcomes for one other time period, 2008. The effect size of 0.27 was statistically significant.

<sup>x</sup> Four-year (on-time) graduation rate.

<sup>y</sup> Four-year (on-time) graduation rate. The study also reports the 5- and 6-year graduation rates, but they did not meet standards.

<sup>z</sup> This study is also used as evidence for Recommendation 4.

<sup>aa</sup> This study also examines the effects of non-certified career pathways, which are not reported here. These programs typically share some characteristics with *Linked Learning* pathways, such as their focus on a career theme, but they vary in their implementation and fidelity to the *Linked Learning* approach.

<sup>bb</sup> The study does not specify the timeframe of the reported graduation rate.

### **Recommendation 4. For schools with many at-risk students, create small, personalized communities to facilitate monitoring and support.**

#### **Level of evidence: Moderate Evidence**

WWC staff and the panel assigned a moderate level of evidence based on six studies that meet WWC group design standards without reservations<sup>225</sup> and two studies that meet WWC group design standards with reservations (see Table D.5).<sup>226</sup> Seven of the eight studies reported positive effects in at least one of the three primary outcome domains,<sup>227</sup> and all six studies that examined outcomes in the graduating school domain found positive effects on high school graduation.<sup>228</sup>

However, only one of the studies that found positive effects evaluates an intervention that is closely aligned with all of the recommendation's steps and does not include components of other recommendations; only this study provides a direct test of the recommendation.<sup>229</sup> Most of the supporting studies examine a variation of the recommendation—the study interventions create small schools rather than small communities within existing schools. Although the studies collectively demonstrate strong internal validity and demonstrate consistent positive effects on relevant outcomes, the level of evidence was rated as moderate because of limited alignment with the recommendation's steps and only one study that provides a direct test of the recommendation.

#### **Consistency of effects on relevant outcomes.**

**Graduating school.** The studies related to this recommendation demonstrated consistent positive effects in the graduating school domain. All six studies that examined outcomes in this domain found positive effects on high school graduation.<sup>230</sup>

**Staying in school.** The studies supporting the recommendation found a preponderance of positive effects in the staying in school domain. Six studies examined outcomes in this domain,<sup>231</sup> four of which found positive effects.<sup>232</sup> One of the studies that found indeterminate effects overall demonstrated some positive effects for the second cohort, which suggests that the large-scale restructuring of a school may take time to show positive effects.<sup>233</sup> The other study that found indeterminate effects on staying in school also found positive effects on graduating school.<sup>234</sup>

**Progressing in school.** Only one study examined outcomes in the progressing in school domain, and it found indeterminate effects in this domain, although it did find positive effects on staying in school.<sup>235</sup>

#### **Details about the supporting evidence (studies that demonstrate positive effects)**

The remaining paragraphs in this section describe the seven studies that found positive effects in at least one domain (i.e., the studies that contribute to the moderate level of evidence).

#### **Internal validity of supporting evidence.**

The studies supporting this recommendation have strong internal validity. Six studies were RCTs with low sample attrition that meet WWC group design standards without reservations.<sup>236</sup> One study was a quasi-experimental design (QED) that meets WWC group design standards with reservations.<sup>237</sup>

#### **Relationship between the evidence and Recommendation 4.**

Only one study supporting this recommendation examines an intervention that does not contain other intervention components and provides a direct test of Recommendation 4.<sup>238</sup> In addition, six of the studies—including the only study that provides a direct test of the recommendation—examine interventions that create small communities by establishing small schools.<sup>239</sup> Only one study examined an intervention that created small

learning communities within existing schools, as recommended in the guide.<sup>240</sup>

**External validity of supporting evidence.**

All seven studies compared the recommended practices to regular classes and activities in traditional high schools. The grade levels in

which the interventions were implemented spanned from 9th grade through high school completion and beyond.<sup>241</sup> Collectively, the study samples represent a diverse group of participants that includes minority and non-minority students from schools across the United States.

**Table D.5. Studies providing evidence for Recommendation 4**

| Study and design   | Participants and targeted grade range | Setting   | Intervention condition as implemented in the study   | Comparison condition as implemented in the study  | Outcome domain and effect size  |
|--|---------------------------------------|---|--|---|---|
| <b>Meets WWC Group Design Standards Without Reservations</b>   |                                       |   |  |   |   |
| <b>Berger et al. (2013)<sup>a</sup></b><br><i>Randomized controlled trial</i>                                    | 2,458 high school students            | 10 <i>Early College High Schools</i> in 5 states (urban areas, mid-sized cities, and small towns) | Students attended <i>Early College High Schools</i> , which partnered with higher-education institutions and offered curricula that allowed students to complete high school and obtain college credits simultaneously. The schools focused on college readiness and preparation, as well as personalized and comprehensive supports to students. <i>Early College High Schools</i> are small, autonomous schools that serve grades 9–12 or 9–13 (4 or 5 years). Eight of the 10 schools were located on college campuses. | Students participated in regular classes and activities at traditional high schools.                      | Graduating school = 0.22 <sup>2b</sup>  |
| <b>Bloom and Unterman (2013)<sup>c</sup></b><br><i>Randomized controlled trial</i>                               | 14,969 students in grades 9–12        | 84 small high schools of choice in New York City  | Students attended small New York City public high schools. The schools provided students with rigorous academic experiences and personalization. In addition, the small schools offered a variety of resources: community partnerships, new principals and teachers, and start-up funding.   | Students participated in regular classes and activities at traditional New York City public high schools. | Graduating school = 0.22 <sup>2d,e</sup>  |
| <b>Dynarski et al. (1998) (Boston JFY High School)<sup>f</sup></b><br><i>Randomized controlled trial</i>         | 212 high school students              | 3 alternative high schools in Boston, Massachusetts   | Students attended alternative high schools that provided a competency-based curriculum and enhanced social services, including career awareness, accelerated learning, and counseling services. Students received individualized course schedules tailored to their needs, flexible schedules, and childcare. The schools were smaller than typical urban high schools and in a separate facility from other high schools in the district.   | Students participated in regular classes and activities at traditional high schools.                      | Staying in school (cohort 1, year 2) = -0.17<br>Graduating school (cohort 1, year 2) = 0.25 <sup>g</sup><br><i>Completing school (GED only, cohort 1, year 2) = -0.09</i>                           |
| <b>Dynarski et al. (1998) (Las Vegas Horizon High Schools)<sup>h</sup></b><br><i>Randomized controlled trial</i> | 399 9th- and 10th-grade students      | 4 alternative high schools in Las Vegas, Nevada   | The students attended alternative high schools, which offered individualized academic plans for each student. Students participated in cooperative learning, small-group instruction, and hands-on experiences. They also received support services and childcare as needed.   | Students participated in regular classes and activities at traditional high schools.                      | Staying in school (cohort 1, year 3) = 0.25 <sup>i</sup><br>Graduating school (cohort 1, year 3) = 0.95 <sup>j,k</sup><br><i>Completing school (GED only, cohort 1, year 3) = -0.12<sup>l</sup></i> |

Table D.5. Studies providing evidence for Recommendation 4 (continued)

| Study and design  | Participants and targeted grade range             | Setting  | Intervention condition as implemented in the study  | Comparison condition as implemented in the study   | Outcome domain and effect size   |
|---|---|--|---|--|--|
| <b>Edmunds et al. (2015)<sup>m, n</sup></b><br><i>Randomized controlled trial</i> | 1,594 high school students in grades 9–12 or 9–13 | 12 <i>Early College High Schools</i> in North Carolina   | Students attended North Carolina <i>Early College High Schools</i> , which partnered with higher-education institutions and offered curricula that allowed students to complete both high school and associate’s degrees simultaneously. The schools focused on college readiness, high-quality teaching and learning, personal relationships between students and staff, high expectations, and staff commitment to a shared mission. <i>Early College High Schools</i> are small, autonomous schools that serve grades 9–12 or 9–13 (4 or 5 years). Teachers monitored students’ progress and actively intervened to provide extra assistance when students’ grades dropped or they fell off track. | Students participated in regular classes and activities.   | Staying in school = 0.40 <sup>so</sup><br>Graduating school = 0.16 <sup>sp</sup>   |
| <b>Kemple (2001)<sup>q, r</sup></b><br><i>Randomized controlled trial</i>         | 1,510 9th- or 10th-grade students                 | 10 schools in 9 cities in the United States: Pittsburgh, Pennsylvania; Baltimore, Maryland; Washington, DC; Miami Beach, Florida; Cocoa, Florida; Socorro, Texas; Santa Ana, California; Watsonville, California; and San Jose, California | Students in <i>Career Academies</i> were part of small learning communities within larger high schools (school-within-a-school model). In each community, there were 3–5 teachers and 50–75 students per grade in grades 9–12 or 10–12. Students took 2 to 4 courses per year in their academy, which focused on a career theme based on local employment needs. The schools established partnerships with employers who provided financial support, internships, and mentoring. Teachers were supported with professional development, and the academy curricula focused on helping students meet core academic requirements for graduation and college preparation.                                 | Most students attended regular classes within the same high schools, but some who were not selected for the <i>Career Academies</i> elected to attend magnet schools or other options. | Staying in school = 0.14 <sup>s</sup><br>Progressing in school = 0.09<br><i>Completing school (2004) = 0.07<sup>s</sup></i><br><i>Postsecondary access and enrollment (2000) = 0.05</i><br><i>Labor market (2000) = 0.09</i> |
| <b>Meets WWC Group Design Standards With Reservations</b>                         |   |  |   |  |  |
| <b>Herman et al. (2012)</b><br><i>Quasi-experimental design</i>                   | 1,516 high school students from 2 cohorts         | 8 small schools in Los Angeles, California   | The Alain Leroy Locke High School in Los Angeles was transformed into a set of smaller college preparatory academies (2 academies for cohort 1 in 2007, and 8 for cohort 2 in 2008). In addition to the new school structure, the model included recommended practices for how principals and teachers should fulfill the tenets of the school reform. The six tenets were as follows: (1) small, safe, personalized schools; (2) high expectations for all students; (3) local control with extensive professional development and accountability; (4) parent participation; (5) maximization of funding to the classroom; and (6) schools open later.   | Students attended other high schools in the district.  | Staying in school (cohort 1) = 0 <sup>t</sup>  |

(continued)

Table D.5. Studies providing evidence for Recommendation 4 (continued)

| Study and design   | Participants and targeted grade range | Setting  | Intervention condition as implemented in the study   | Comparison condition as implemented in the study           | Outcome domain and effect size                                      |
|--|---------------------------------------|--|--|--|---|
| <b>Warner et al. (2015)<sup>u, v</sup></b><br><i>Quasi-experimental design</i> | 14,304 high school students           | High schools in 8 school districts in California: Antioch, Long Beach, Los Angeles, Oakland, Pasadena, Porterville, Sacramento City, and West Contra Costa | Students enrolled in a <i>Linked Learning</i> career pathways program, which consisted of comprehensive programs of study within schools that combined classroom learning with real-world applications outside of school. The <i>Linked Learning</i> approach had four main components: (1) rigorous academics, (2) career-technical education, (3) work-based learning, and (4) comprehensive support services. Pathway teams of teachers and staff worked together to establish communities and provide individualized support to students. Students enrolled in a pathway beginning in 9th or 10th grade and continued their enrollment until the end of high school. To become a <i>Linked Learning</i> career pathway, a program had to be certified by one of two organizations, ConnectEd or the National Academy Foundation (NAF). | Students participated in traditional high school programs. | Staying in school = 0.17*<br>Graduating school = 0.16 <sup>*w</sup> |

Notes:

All studies in this table meet WWC group design standards with or without reservations. Within each rating section, studies are listed alphabetically by first author.

Each row in this table represents a study, defined by the WWC as an examination of the effect of an intervention on a distinct sample. In some cases, multiple contrasts or studies were described in a single article. In these cases, the contrast or study that is most relevant to the recommendation is included in the table.

For studies that included multiple outcomes in a domain, reported effect sizes and statistical significance are for the domain and calculated as described in the *WWC Procedures and Standards Handbook 3.0* (pp. 25–26).

Several studies examined the dropout rate, which falls under the staying in school domain. These effect sizes were reported as negative in the studies. In this table, the signs of the effect sizes for staying in school are reversed for clarity. A plus sign (+) indicates that the intervention had a positive effect on staying in school (or a reduced dropout rate), meaning the intervention group had a higher rate of staying in school than the comparison group.

Italicized gray font is used for outcome domains (e.g., completing school, postsecondary access and enrollment, and labor market participation) that are not directly related to dropout prevention and do not contribute to the level of evidence of this recommendation, but might be affected by dropout prevention practices and be of interest to educators and practitioners who are implementing these practices.

\* = statistically significant at the 0.05 level

<sup>a</sup> This study is also used as evidence for Recommendation 3. Although another study on the *Early College High School* initiative, **Edmunds et al. (2015)**, supports Recommendations 1, 3, and 4, **Berger et al. (2013)** does not include any information on teachers monitoring students, and therefore does not support Recommendation 1.

<sup>b</sup> Overall graduation rate over the course of the study, which represents a different amount of time between 9th-grade enrollment and outcome measurement for each cohort. Cohort 1’s graduation rate is measured 6 years after enrolling in 9th grade; cohort 2’s graduation rate is measured 5 years after enrolling in 9th grade; and cohort 3’s graduation rate is measured 4 years after enrolling in 9th grade.

<sup>c</sup> This study was reviewed in conjunction with Bloom, Thompson, and Unterman (2010). The analyses in Bloom, Thompson, and Unterman (2010) did not meet WWC standards.

<sup>d</sup> Four-year (on-time) graduation rate.

<sup>e</sup> Effect sizes are calculated based on model-imputed data for students who had dropped out of school.

<sup>f</sup> This study is also used as evidence for Recommendations 2 and 3.

<sup>g</sup> Graduation rate 2 years after the start of the program; students were 18 years old on average upon entering the program.

<sup>h</sup> This study is also used as evidence for Recommendation 2.

<sup>i</sup> The study also reports the dropout rate under the staying in school domain for cohorts 1 and 2 in year 2 of the program: the effect was 0.22 and statistically significant.

<sup>j</sup> Graduation rate 3 years after the start of the program; students were 15–16 years old upon entering the program.

<sup>k</sup> The study also reports the graduation rate under the graduating school domain for cohorts 1 and 2 in year 2 of the program. However, the WWC cannot calculate an effect size when the mean of one group (in this case the intervention group) is 0.

<sup>l</sup> The study also reports the GED completion rate under the completing school domain for cohorts 1 and 2 in year 2 of the program: the effect was 0.43 and not statistically significant.

<sup>m</sup> This study is also used as evidence for Recommendations 1 and 3.

## Appendix D (continued)

<sup>n</sup> The review of this study incorporates data from **Edmunds et al. (2011)** and information from Edmunds et al. (2010). None of the outcomes in Edmunds et al. (2010) meet eligibility requirements.

<sup>o</sup> The staying in school outcomes reported in this table is from **Edmunds et al. (2011)**. The sample consisted of 676 students from 19 *Early College High Schools*. This sample overlaps with the sample included in **Edmunds et al. (2015)**.

<sup>p</sup> Five-year graduation rate.

<sup>q</sup> This study is also used as evidence for Recommendation 3.

<sup>r</sup> This study was reviewed in conjunction with Kemple (1997), Kemple (2004), Kemple (2008), Kemple and Rock (1996), Kemple and Snipes (2000), and Kemple and Willner (2008).

<sup>s</sup> The study reported completing school outcome for one other time period, 2008. The effect size of 0.27 was statistically significant.

<sup>t</sup> The study also reported the effect on staying in school for cohort 2. The effect size was 0.13 and not statistically significant.

<sup>u</sup> This study is also used as evidence for Recommendation 3.

<sup>v</sup> This study also examines the effects of non-certified career pathways, which are not reported here. These programs typically share some characteristics with *Linked Learning* pathways, such as their focus on a career theme, but they vary in their implementation and fidelity to the *Linked Learning* approach.

<sup>w</sup> The study does not specify the timeframe of the reported graduation rate.



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<sup>a</sup> Eligible studies that meet WWC design standards or meet design standards with reservations are indicated by **bold text** in the end-notes and references pages. For more information about these studies, please see Appendix D.

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# Endnotes

- 1 Hollands et al. (2014).
- 2 Heckman and LaFontaine (2010).
- 3 Stetser and Stillwell (2014).
- 4 U.S. Department of Labor (2015a).
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- 6 Rumberger (2011).
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- 8 Dynarski et al. (2008). [https://ies.ed.gov/ncee/wwc/Docs/PracticeGuide/dp\\_pg\\_090308.pdf](https://ies.ed.gov/ncee/wwc/Docs/PracticeGuide/dp_pg_090308.pdf).
- 9 Bowers et al. 2013; Balfanz, Herzog, and Mac Iver (2007).
- 10 See the *WWC Procedures and Standards Handbook, Version 3.0*, at <https://ies.ed.gov/ncee/wwc/Handbooks>.
- 11 Rumberger (2011).
- 12 Eligible studies were reviewed using the WWC group design or pilot regression discontinuity standards, described in the *WWC Procedures and Standards Handbook, Version 3.0*, at [https://ies.ed.gov/ncee/wwc/Docs/referenceresources/wwc\\_procedures\\_v3\\_0\\_standards\\_handbook.pdf](https://ies.ed.gov/ncee/wwc/Docs/referenceresources/wwc_procedures_v3_0_standards_handbook.pdf).
- 13 The protocol for this practice guide is available on the WWC website: <https://ies.ed.gov/ncee/wwc/Protocols>.
- 14 **Corrin et al. (2015); Cortes et al. (2015); Dynarski et al. (1998)—Albuquerque Middle School Leadership Program; Dynarski et al. (1998)—Long Beach Up With Literacy; Dynarski et al. (1998)—Rockford Early Identification and Intervention Project; Dynarski et al. (1998)—Sweetwater Twelve Together program; Heller et al. (2013); Heller et al. (2015); Larson and Rumberger (1995); Luna and Fowler (2011); Rodríguez-Planas (2012); Sinclair et al. (1998); Sinclair, Christenson, and Thurlow (2005).**
- 15 **Gonzales et al. (2014).**
- 16 **Berger et al. (2013); Bloom and Unterman (2013); Corrin et al. (2016); Edmunds et al. (2015); Johnson, Simon, and Mun (2014); Kemple (2001); Herman et al. (2012); Neild, Boccanfuso, and Byrnes (2015); Warner et al. (2015).**
- 17 **Dynarski et al. (1998)—Boston JFY High School and University High School; Dynarski et al. (1998)—Las Vegas Horizon High Schools.**
- 18 Hollands et al. (2014).
- 19 Dynarski et al. (2008).
- 20 Bridgeland, Dilulio, and Burke Morison (2006); Mac Iver (2010).
- 21 Allensworth et al. (2014); Balfanz, Herzog, and Mac Iver (2007); Bowers et al. (2013).
- 22 Bruce et al. (2011); Edmunds et al. (2013).
- 23 Allensworth (2013); Davis, Herzog, and Legters (2013); Roderick et al. (2014).
- 24 Allensworth (2013).
- 25 **Corrin et al. (2016); Cortes et al. (2015); Dynarski et al. (1998)—Long Beach Up With Literacy; Edmunds et al. (2015); Heller et al. (2013); Heller et al. (2015).**
- 26 **Corrin et al. (2016); Dynarski et al. (1998)—Long Beach Up With Literacy; Edmunds et al. (2015); Heller et al. (2013); Heller et al. (2015).**
- 27 **Cortes et al. (2015).**
- 28 **Cortes et al. (2015); Edmunds et al. (2015).**
- 29 Appendix D provides more information about the outcome domains and why graduation is weighted more heavily than others in determining the recommendation's level of evidence.

<sup>a</sup> Eligible studies that meet WWC design standards or meet design standards with reservations are indicated by **bold text** in the endnotes and references pages. For more information about these studies, please see Appendix D.



- 30 **Cortes et al. (2015); Edmunds et al. (2015).**
- 31 Ibid.
- 32 **Corrin et al. (2016).**
- 33 Allensworth et al. (2014); Balfanz, Herzog, and Mac Iver (2007); Bowers (2013).
- 34 **Corrin et al. (2016);** Allensworth and Easton (2007).
- 35 Bowers (2013).
- 36 Regional Education Laboratory Southeast (2011); Gewertz (2009).
- 37 This is an example of a threshold used by a district to monitor 6th-grade students.
- 38 This school does not use any behavioral indicators for identifying at-risk students, only attendance and grades.
- 39 Data Quality Campaign (2014).
- 40 Frazelle and Nagel (2015).
- 41 Allensworth (2013).
- 42 Allensworth et al. (2014).
- 43 Nomi and Allensworth (2009).
- 44 For such double-dose math classes to be effective, it is important to provide professional development for teachers to facilitate effective use of the extra period (Nomi & Allensworth, 2009).
- 45 Rumberger (2016).
- 46 Allensworth et al. (2014); Balfanz, Herzog, and Mac Iver (2007).
- 47 Rogers et al. (2017).
- 48 Adapted from Figure 1.B from Allensworth et al. (2014).
- 49 Based on data from Allensworth et al. (2014).
- 50 Chang (2014).
- 51 Adapted from Garoupa (2015).
- 52 Frazelle and Nagel (2015).
- 53 Davis, Herzog, and Legters (2013).
- 54 Heppen et al. (2013).
- 55 Davis, Herzog, and Legters (2013).
- 56 Frazelle and Nagel (2015).
- 57 Allensworth and Easton (2007).
- 58 **Corrin et al. (2016); Corrin et al. (2015); Dynarski et al. (1998)—Las Vegas Horizon High Schools; Dynarski et al. (1998)—Boston JFY High School and University High School; Larson and Rumberger (1995); Sinclair, Christenson, and Thurlow (2005); Sinclair et al. (1998); Rodríguez-Planas (2012).**
- 59 **Dynarski et al. (1998)—Las Vegas Horizon High Schools; Dynarski et al. (1998)—Boston JFY High School and University High School; Sinclair, Christenson, and Thurlow (2005); Sinclair et al. (1998).** A fifth study, **Larson and Rumberger (1995)**, found positive effects on staying in school after 1 and 2 years, but not after 3 years, which is the longest observation period reported. The effect size for the 3-year measure is 0.24 and not statistically significant at the 0.05 level.
- 60 **Dynarski et al. (1998)—Las Vegas Horizon High Schools; Dynarski et al. (1998)—Boston JFY High School and University High School.**
- 61 **Sinclair, Christenson, and Thurlow (2005); Sinclair et al. (1998).**
- 62 **Sinclair et al. (1998).**
- 63 **Larson and Rumberger (1995); Rodríguez-Planas (2012); Sinclair et al. (1998).**
- 64 **Larson and Rumberger (1995); Rodríguez-Planas (2012); Sinclair, Christenson, and Thurlow (2005).**
- 65 Sepanik et al. (2015).
- 66 **Sinclair et al. (1998).**
- 67 **Corrin et al. (2015).**
- 68 Maxfield et al. (2003).
- 69 **Sinclair et al. (1998).**
- 70 **Corrin et al. (2015).**
- 71 Sepanik et al. (2015).
- 72 **Larson and Rumberger (1995).**
- 73 Maxfield et al. (2003).
- 74 **Sinclair et al. (1998).**

- 75 Ibid.
- 76 Maxfield et al. (2003).
- 77 **Larson and Rumberger (1995); Rodríguez-Planas (2012); Sinclair et al. (1998).**
- 78 **Larson and Rumberger (1995).**
- 79 **Sinclair et al. (1998).**
- 80 Ibid.
- 81 **Sinclair, Christenson, and Thurlow (2005).**
- 82 Davis, Herzog, and Legters (2013).
- 83 Sepanik et al. (2015).
- 84 **Sinclair (1998).**
- 85 Ibid.
- 86 Ibid.
- 87 National Center on Safe Supportive Learning Environments (2016).
- 88 Dary et al. (2016).
- 89 Bridgeland, Dilulio, and Burke Morison (2006); Dary et al. (2016).
- 90 National Center on Safe Supportive Learning Environments (2016).
- 91 **Berger et al. (2013); Dynarski et al. (1998)—Boston JFY High School and University High School; Dynarski et al. (1998)—Albuquerque Middle School Leadership Program; Dynarski et al. (1998)—Rockford *Early Identification and Intervention Project*; Dynarski et al. (1998)—Sweetwater *Twelve Together* Program; Edmunds et al. (2015); Gonzales et al. (2014); Heller et al. (2013); Heller et al. (2015); Johnson, Simon, and Mun (2014); Kemple et al. (2001); Luna and Fowler (2011); Neild, Boccanfuso, and Byrnes (2015); Warner et al. (2015).**
- 92 **Berger et al. (2013); Dynarski et al. (1998)—Albuquerque Middle School Leadership Program; Dynarski et al. (1998)—Boston JFY High School and University High School; Dynarski et al. (1998)—Sweetwater *Twelve Together* Program; Dynarski et al. (1998)—Rockford *Early Identification and Intervention Project*; Edmunds et al. (2015); Gonzales et al. (2014); Heller et al. (2013); Heller et al. (2015); Johnson, Simon, and Mun (2014); Kemple et al. (2001); Luna and Fowler (2011); Neild, Boccanfuso, and Byrnes (2015); Warner et al. (2015).**
- 93 **Luna and Fowler (2011); Neild, Boccanfuso, and Byrnes (2015); Warner et al. (2015).**
- 94 **Berger et al. (2013); Dynarski et al. (1998)—Boston JFY High School and University High School; Edmunds et al. (2015); Gonzales et al. (2014); Johnson, Simon, and Mun (2014); Kemple et al. (2001); Luna and Fowler (2011); Neild, Boccanfuso, and Byrnes (2015); Warner et al. (2015).**
- 95 **Berger et al. (2013); Dynarski et al. (1998)—Boston JFY High School and University High School; Johnson, Simon, and Mun (2014); Luna and Fowler (2011); Neild, Boccanfuso, and Byrnes (2015); Warner et al. (2015).**
- 96 **Gonzales et al. (2014); Johnson, Simon, and Mun (2014); Luna and Fowler (2011); Neild, Boccanfuso, and Byrnes (2015).**
- 97 Allensworth and Easton (2007).
- 98 For resources on planning and implementing career- or college-focused programs, see the College & Career Academy Support Network, which provides a curriculum database, scheduling guide, and information on staffing. College & Career Academy Support Network resources can be found at <http://casn.berkeley.edu/>
- 99 Allensworth and Easton (2007).
- 100 Edmunds et al. (2012); Laing and Villavicencio (2016); National Dropout Prevention Center (2008).
- 101 National Dropout Prevention Center (2011).
- 102 The University of California Curriculum Integration site provides examples of courses that integrate career skills and academic standards: <http://ucci.ucop.edu/integrated-courses>.

- 103 UC Curriculum Integration (2014).
- 104 Center for Educational Partnerships (2012).
- 105 Linked Learning Alliance (n.d.); ConnectEd: The California Center for College and Career (n.d.); Laing and Villavicencio (2016); Edmunds et al. (2012).
- 106 Durlak et al. (2011); Farrington et al. (2012).
- 107 Collaborative for Academic, Social, and Emotional Learning (2017).
- 108 National Research Council and the Institute of Medicine (2004).
- 109 **Johnson, Simon, and Mun (2014).**
- 110 Bryson and Opitz (2008).
- 111 Transforming Education and CORE Districts (2015); Opitz (2008); Tennessee Department of Education (2015).
- 112 Illinois State Board of Education (n.d.).
- 113 **Heller et al. (2015).**
- 114 For more surveys, see the U.S. Department of Education School Climate Survey Compendium, available at <https://safesupportivelearning.ed.gov/topic-research/school-climate-measurement/school-climate-survey-compendium>
- 115 Bryk et al. (2010); Klugman et al. (2015); Allensworth and Easton (2007); The University of Chicago Consortium on School Research (2015); National Center for Education Statistics (2015); Lopez, Agrawal, and Calderon (2010).
- 116 For more information on selecting a school climate survey or measures of student engagement, see U.S. Department of Education, Office of Safe and Healthy Students (2016) and American Institutes for Research (2015).
- 117 Allensworth and Easton (2007).
- 118 The University of Chicago Consortium on School Research (2015).
- 119 Guha et al. (2014).
- 120 Guha et al. (2014); **Warner et al. (2015).**
- 121 **Warner et al. (2015).**
- 122 Ibid.
- 123 **Johnson, Simon, and Mun (2014).**
- 124 Aness (1995); Cook (2000); Fine (1994); Oxley (2008).
- 125 National Association of Secondary School Principals (2004).
- 126 Lee and Burkam (2003); National Research Council and the Institute of Medicine (2004); Wehlage (1989).
- 127 **Berger et al. (2013); Bloom and Unterman (2013); Dynarski et al. (1998)—Las Vegas Horizon High Schools; Dynarski et al. (1998)—Boston JFY High School and University High School; Edmunds et al. (2015); Herman et al. (2012); Kemple et al. (2001); Warner et al. (2015).**
- 128 **Berger et al. (2013); Bloom and Unterman (2013); Dynarski et al. (1998)—Las Vegas Horizon High Schools; Dynarski et al. (1998)—Boston JFY High School and University High School; Edmunds et al. (2015); Kemple et al. (2001).**
- 129 **Herman et al. (2012); Warner et al. (2015).**
- 130 **Berger et al. (2013); Bloom and Unterman (2013); Dynarski et al. (1998)—Las Vegas Horizon High Schools; Dynarski et al. (1998)—Boston JFY High School and University High School; Edmunds et al. (2015); Kemple et al. (2001); Warner et al. (2015).**
- 131 **Berger et al. (2013); Bloom and Unterman (2013); Dynarski et al. (1998)—Boston JFY High School and University High School; Warner et al. (2015).**
- 132 **Bloom and Unterman (2013).**
- 133 **Kemple (2001).**
- 134 Edmunds et al. (2013).
- 135 Oxley (2008).
- 136 **Bloom et al. (2013);** Edmunds et al. (2013).
- 137 Edmunds et al. (2013).
- 138 Ibid.
- 139 Dayton et al. (2007).
- 140 Ibid.
- 141 Cotton (2001); Oxley (2008).
- 142 Oxley (2008).
- 143 Guha et al. (2014); Oxley (2008).

- 144 **Bloom and Unterman (2013); Dynarski et al. (1998)—Las Vegas Horizon High Schools; Dynarski et al. (1998)—Boston JFY High School and University High School; Edmunds et al. (2015); Kemple et al. (2001); Warner et al. (2015).**
- 145 U.S. Department of Labor (2016).
- 146 Following WWC guidelines, improved outcomes are indicated by either a positive, statistically significant effect or a positive, substantively important effect size. The WWC defines substantively important, or large, effects on outcomes to be those with effect sizes greater than or equal to 0.25 standard deviations. See the WWC guidelines at <https://whatworks.ed.gov>.
- 147 For more information, see the WWC Frequently Asked Questions page for practice guides at <https://whatworks.ed.gov>.
- 148 This includes randomized controlled trials (RCTs) and quasi-experimental design studies (QEDs). Studies not contributing to levels of evidence include single-case designs (SCDs) evaluated with WWC pilot SCD standards and regression discontinuity designs (RDDs) evaluated with pilot RDD standards.
- 149 The research may include studies generally meeting WWC group design standards and supporting the effectiveness of a program, practice, or approach with small sample sizes and/or other conditions of implementation or analysis that limit generalizability. The research may include studies that support the generality of a relation but do not meet WWC group design standards due only to lack of demonstrated equivalence at pretest for QEDs. QEDs without equivalence must include a pretest covariate as a statistical control for selection bias. These studies must be accompanied by at least one relevant study meeting WWC design standards. For this practice guide, the latter studies did not need to be considered because a sufficient number of studies meet WWC design standards for each recommendation.
- 150 American Educational Research Association, American Psychological Association, and National Council on Measurement in Education (1999).
- 151 Eligible studies that meet WWC group design standards with or without reservations are indicated by **bold text** in the endnotes and references pages.
- 152 One study was reviewed under the WWC pilot regression discontinuity standards.
- 153 A statistically significant finding is a finding that is unlikely to occur by chance.
- 154 Substantively important findings are defined as those with an effect size greater than or equal to 0.25 or less than or equal to  $-0.25$ , as measured by Hedge's *g*.
- 155 For multiple comparison adjustments and cluster corrections, see the *WWC Procedures and Standards Handbook, Version 3.0* at [http://ies.ed.gov/ncee/wwc/pdf/reference\\_resources/wwc\\_procedures\\_v3\\_0\\_standards\\_handbook.pdf](http://ies.ed.gov/ncee/wwc/pdf/reference_resources/wwc_procedures_v3_0_standards_handbook.pdf).
- 156 **Corrin et al. (2015); Cortes et al. (2015); Dynarski et al. (1998)—Albuquerque Middle School Leadership Program; Dynarski et al. (1998)—Long Beach Up With Literacy; Dynarski et al. (1998)—Rockford Early Identification and Intervention Project; Dynarski et al. (1998)—Sweetwater Twelve Together program; Heller et al. (2013); Heller et al. (2015); Larson and Rumberger (1995); Luna and Fowler (2011); Rodríguez-Planas (2012); Sinclair et al. (1998); Sinclair, Christenson, and Thurlow (2005).**
- 157 **Gonzales et al. (2014).**
- 158 **Berger (2013); Bloom and Unterman (2013); Corrin et al. (2016); Edmunds et al. (2015); Johnson, Simon, and Mun (2014); Kemple (2001); Herman et al. (2012); Neild, Boccanfuso, and Byrnes (2015), Warner et al. (2015).**
- 159 **Dynarski et al. (1998)—Boston JFY High School and University High School; Dynarski et al. (1998)—Las Vegas Horizon High Schools.**
- 160 **Johnson, Simon, and Mun (2014)** reports graduation from a specific school or district rather than graduation from any school. Other studies did not specify whether the

- data covered graduation from any school or district.
- 161 Campbell (2015); Campolieti, Fang, and Gunderson (2010); Jaeger and Page (1996).
- 162 **Dynarski et al. (1998)—Las Vegas Horizon High Schools; Dynarski et al. (1998)—Boston JFY High School; Kemple (2001); Rodriguez-Planas (2012); Sinclair, Christenson, and Thurlow (2005)** reported outcomes in the completing school domain. **Cortes et al. (2015); Kemple (2001); Rodriguez-Planas (2012); Luna and Fowler (2011)** reported outcomes in postsecondary attainment or labor market domain.
- 163 If a study has outcomes measured at different points in time that all meet WWC group design standards, the effects on longest-term outcomes appear in the appendix tables, and other outcomes are presented in the notes of the appendix tables. If a study's longest-term outcomes do not meet WWC group design standards, but there are other outcomes that do, then the appendix tables include the longest-term outcomes that meet WWC group design standards. In these studies, the outcomes in the appendix tables contribute to the level of evidence, even if they are not the longest-term outcomes reported in the study.
- 164 If a study reports graduation at 4 years as well as at a different time point (e.g., 6 years after 9th-grade enrollment), the graduation outcomes with other timeframes will be reported in table notes.
- 165 The *WWC Procedures and Standards Handbook, Version 3.0*, states, "Generally the WWC does not consider grades or grade point average as eligible for review because criteria may differ across teachers, schools, or districts."
- 166 Credits earned and grade promotion are eligible in the WWC Dropout Prevention topic area, and this guide is consistent with the domains defined in the topic area. It is possible that credits have higher reliability than grades because the majority of the measurement error in grades may be among students who receive credit. Furthermore, the criteria for credit accumulation might be more standardized within a school and across schools than grades.
- 167 The implementation of *Early College High Schools* examined in **Edmunds et al. (2015)** includes a student-tracking component related to Recommendation 1.
- 168 **Corrin et al. (2016); Dynarski et al. (1998)—Long Beach Up With Literacy; Edmunds et al. (2015); Heller et al. (2013); Heller et al. (2015).**
- 169 **Cortes et al. (2015).**
- 170 **Cortes et al. (2015); Edmunds et al. (2015).**
- 171 **Cortes et al. (2015); Edmunds et al. (2015).**
- 172 **Edmunds et al. (2015).**
- 173 **Cortes et al. (2015).**
- 174 **Cortes et al. (2015); Edmunds et al. (2015); Heller et al. (2013).**
- 175 **Cortes et al. (2015); Edmunds et al. (2015); Cortes et al. (2015)** examines outcomes in the graduating school domain measured at 4 and 5 years after 9th-grade enrollment. The study does not report sufficient information for the WWC to assess the size and statistical significance of the effect sizes. The study uses a regression discontinuity design, and the authors report coefficients from the reduced-form (intent-to-treat) estimates, which are positive effects and statistically significant ( $p \leq 0.05$ ) for 5-year graduation, and positive and not statistically significant for 4-year graduation.
- 176 **Edmunds et al. (2015).**
- 177 **Cortes et al. (2015); Dynarski et al. (1998)—Long Beach Up With Literacy; Heller et al. (2013); Heller et al. (2015).**
- 178 **Dynarski et al. (1998)—Long Beach Up With Literacy.**
- 179 **Corrin et al. (2016); Cortes et al. (2015).** A third study, **Dynarski et al. (1998)—Long Beach Up With Literacy**, also examined outcomes in the progressing in school domain, but the study did not include sufficient information for the WWC to assess the size and statistical significance of the effects on this outcome.

- 180 **Corrin et al. (2016)**. The panel had several possible explanations for the lack of consistent effects for **Corrin et al. (2016)**: the intervention might be more effective for middle school than high school students, the intervention might have been too low intensity for most students (since outcomes were measured on all students, but only a subset of students received intensive supports), or the intervention might have been evaluated prematurely.
- 181 **Dynarski et al. (1998)—Long Beach Up With Literacy**.
- 182 **Cortes et al. (2015); Edmunds et al. (2015)**.
- 183 **Edmunds et al. (2015)**.
- 184 **Cortes et al. (2015)**.
- 185 Ibid.
- 186 Ibid.
- 187 **Edmunds et al. (2015)**.
- 188 One study, **Edmunds et al. (2015)**, examined an intervention that lasted 5 years; students who needed an additional year to graduate high school and complete college credits (as part of the *Early College High School* program) participated in 5 years of the intervention.
- 189 **Cortes et al. (2015)**.
- 190 **Edmunds et al. (2015)**.
- 191 **Corrin et al. (2015); Corrin et al. (2016); Dynarski et al. (1998)—Las Vegas Horizon High Schools; Dynarski et al. (1998)—Boston JFY High School and University High School; Larson and Rumberger (1995); Rodríguez-Planas (2012); Sinclair et al. (1998); Sinclair, Christenson, and Thurlow (2005)**.
- 192 **Dynarski et al. (1998)—Las Vegas Horizon High Schools; Dynarski et al. (1998)—Boston JFY High School and University High School; Sinclair et al. (1998); Sinclair, Christenson, and Thurlow (2005)**. A fifth study, **Larson and Rumberger (1995)**, found positive effects on staying in school after 1 and 2 years, but not after 3 years, which is the longest observation period reported. The effect size for the 3-year measure is 0.24 and not statistically significant at the 0.05 level.
- 193 **Dynarski et al. (1998)—Las Vegas Horizon High Schools; Dynarski et al. (1998)—Boston JFY High School and University High School**.
- 194 **Sinclair et al. (1998); Sinclair, Christenson, and Thurlow (2005)**.
- 195 **Dynarski et al. (1998)—Las Vegas Horizon High Schools; Dynarski et al. (1998)—Boston JFY High School and University High School**.
- 196 **Dynarski et al. (1998)—Las Vegas Horizon High Schools; Sinclair, Christenson, and Thurlow (2005)**.
- 197 **Dynarski et al. (1998)—Boston JFY High School and University High School; Larson and Rumberger (1995)**.
- 198 **Dynarski et al. (1998)—Boston JFY High School and University High School**.
- 199 **Larson and Rumberger (1995)**.
- 200 **Sinclair et al. (1998)**.
- 201 **Corrin et al. (2015); Corrin et al. (2016)**.
- 202 **Corrin et al. (2016)**. The panel believes that this intervention might be more effective for middle school students than high school students, may have been too low intensity for the majority of students (since outcomes were measured on all students, but only a subset of students received intensive supports), or may have been evaluated prematurely.
- 203 **Corrin et al. (2015)**.
- 204 **Dynarski et al. (1998)—Las Vegas Horizon High Schools; Dynarski et al. (1998)—Boston JFY High School and University High School; Sinclair et al. (1998); Sinclair, Christenson, and Thurlow (2005)**.
- 205 **Sinclair et al. (1998); Sinclair, Christenson, and Thurlow (2005)**.
- 206 **Berger et al. (2013); Dynarski et al. (1998)—Albuquerque Middle School Leadership Program; Dynarski et al. (1998)—Boston JFY High School and University High School; Dynarski et al. (1998)—Sweetwater *Twelve Together* Program; Dynarski et al. (1998)—Rockford *Early Identification and Intervention Project*; Edmunds et al. (2015)**;

- Gonzales et al. (2014); Heller et al. (2013); Heller et al. (2015); Johnson, Simon, and Mun (2014); Kemple et al. (2001).
- 207 Luna and Fowler (2011); Neild, Boccanfuso, and Byrnes (2015); Warner et al. (2015).
- 208 Berger et al. (2013); Dynarski et al. (1998)—Boston JFY High School and University High School; Edmunds et al. (2015); Gonzales et al. (2014); Johnson, Simon, and Mun (2014); Kemple et al. (2001); Luna and Fowler (2011); Neild, Boccanfuso, and Byrnes (2015); Warner et al. (2015).
- 209 Berger et al. (2013); Dynarski et al. (1998)—Boston JFY High School and University High School; Johnson, Simon, and Mun (2014); Luna and Fowler (2011); Neild, Boccanfuso, and Byrnes (2015); Warner et al. (2015).
- 210 Gonzales et al. (2014); Johnson, Simon, and Mun (2014); Luna and Fowler (2011); Neild, Boccanfuso, and Byrnes (2015).
- 211 Berger et al. (2013); Dynarski et al. (1998)—Boston JFY High School and University High School; Edmunds et al. (2015); Johnson, Simon, and Mun (2014); Luna and Fowler (2011); Neild, Boccanfuso, and Byrnes (2015); Warner et al. (2015).
- 212 Dynarski et al. (1998)—Albuquerque Middle School Leadership Program; Dynarski et al. (1998)—Boston JFY High School and University High School; Dynarski et al. (1998)—Sweetwater *Twelve Together* Program; Dynarski et al. (1998)—Rockford *Early Identification and Intervention Project*; Edmunds et al. (2015); Gonzales et al. (2014); Heller et al. (2013); Heller et al. (2015); Kemple et al. (2001); Luna and Fowler (2011); Warner et al. (2015).
- 213 Edmunds et al. (2015); Gonzales et al. (2014); Kemple et al. (2001); Luna and Fowler (2011); Warner et al. (2015).
- 214 Dynarski et al. (1998)—Albuquerque Middle School Leadership Program; Dynarski et al. (1998)—Boston JFY High School and University High School; Dynarski et al. (1998)—Sweetwater *Twelve Together* Program; Dynarski et al. (1998)—Rockford *Early Identification and Intervention Project*.
- 215 Neild, Boccanfuso, and Byrnes (2015).
- 216 Kemple et al. (2001).
- 217 Berger et al. (2013); Dynarski et al. (1998)—Boston JFY High School and University High School; Dynarski et al. (1998)—Sweetwater *Twelve Together* Program; Edmunds et al. (2015); Gonzales et al. (2014); Johnson, Simon, and Mun (2014); Kemple et al. (2001).
- 218 Neild, Boccanfuso, and Byrnes (2015).
- 219 Luna and Fowler (2011); Warner et al. (2015).
- 220 Dynarski et al. (1998)—Albuquerque Middle School Leadership Program; Gonzales et al. (2014); Johnson, Simon, and Mun (2014); Luna and Fowler (2011); Neild, Boccanfuso, and Byrnes (2015).
- 221 Berger et al. (2013); Dynarski et al. (1998)—Boston JFY High School and University High School; Edmunds et al. (2015); Kemple et al. (2001).
- 222 Berger et al. (2013); Dynarski et al. (1998)—Boston JFY High School and University High School; Edmunds et al. (2015); Johnson, Simon, and Mun (2014); Kemple et al. (2001); Luna and Fowler (2011); Neild, Boccanfuso, and Byrnes (2015); Warner et al. (2015).
- 223 Gonzales et al. (2014).
- 224 One study, Edmunds et al. (2015), examined an intervention that lasted 5 years; students who needed an additional year to graduate high school and complete college credits (as part of the Early College High School program) participated in 5 years of the intervention.
- 225 Berger et al. (2013); Bloom and Unterman (2013); Dynarski et al. (1998)—Las Vegas Horizon High Schools; Dynarski et al. (1998)—Boston JFY High School and University High School; Edmunds et al. (2015); Kemple et al. (2001).

- 226 **Herman et al. (2012); Warner et al. (2015).**
- 227 **Berger et al. (2013); Bloom and Unterman (2013); Dynarski et al. (1998)—Las Vegas Horizon High Schools; Dynarski et al. (1998)—Boston JFY High School and University High School; Edmunds et al. (2015); Kemple et al. (2001); Warner et al. (2015).**
- 228 **Berger et al. (2013); Bloom and Unterman (2013); Dynarski et al. (1998)—Boston JFY High School and University High School; Dynarski et al. (1998)—Las Vegas Horizon High Schools; Edmunds et al. (2015); Warner et al. (2015).**
- 229 **Bloom and Unterman (2013).**
- 230 **Berger et al. (2013); Bloom and Unterman (2013); Dynarski et al. (1998)—Boston JFY High School and University High School; Dynarski et al. (1998)—Las Vegas Horizon High Schools; Edmunds et al. (2015); Warner et al. (2015).**
- 231 **Dynarski et al. (1998)—Las Vegas Horizon High Schools; Dynarski et al. (1998)—Boston JFY High School and University High School; Edmunds et al. (2015); Kemple et al. (2001); Herman et al. (2012); Warner et al. (2015).**
- 232 **Dynarski et al. (1998)—Las Vegas Horizon High Schools; Edmunds et al. (2015); Kemple et al. (2001); Warner et al. (2015).**
- 233 **Herman et al. (2012).**
- 234 **Dynarski et al. (1998)—Boston JFY High School and University High School.**
- 235 **Kemple et al. (2001).**
- 236 **Berger et al. (2013); Bloom and Unterman (2013); Dynarski et al. (1998)—Las Vegas Horizon High Schools; Dynarski et al. (1998)—Boston JFY High School and University High School; Edmunds et al. (2015); Kemple et al. (2001).**
- 237 **Warner et al. (2015).**
- 238 **Bloom and Unterman (2013).**
- 239 **Berger et al. (2013); Bloom and Unterman (2013); Dynarski et al. (1998)—Las Vegas Horizon High Schools; Dynarski et al. (1998)—Boston JFY High School and University High School; Edmunds et al. (2015); Kemple et al. (2001).**
- 240 **Warner et al. (2015).**
- 241 One study, **Edmunds et al. (2015)**, examined an intervention that lasted 5 years; students who graduated on time (in 4 years) received support for 1 year after graduation.





Intervention  
Report



Practice  
Guide



Quick  
Review



Single Study  
Review

A **practice guide** presents recommendations for educators to address challenges in their classrooms and schools. They are based on reviews of research, the experiences of practitioners, and the expert opinions of a panel of nationally recognized experts.

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