



## EDUCATOR'S PRACTICE GUIDE

A set of recommendations to address challenges in classrooms and schools

WHAT WORKS CLEARINGHOUSE™

# Teaching Secondary Students to Write Effectively



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U.S. DEPARTMENT OF EDUCATION

**ies** 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 teaching students in grades 6–12 to write effectively. 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 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 bolded. 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 <http://whatworks.ed.gov>.

## **How to use this guide**

This guide provides secondary teachers in all disciplines and administrators with instructional recommendations that can be implemented in conjunction with existing standards or curricula. The guide does not recommend a particular curriculum. Teachers can use the guide when planning instruction to support the development of writing skills among students in grades 6–12 in diverse contexts. The panel believes that the three recommendations complement one other and can be implemented simultaneously. The recommendations allow teachers the flexibility to tailor instruction to meet the needs of their classrooms and students, including adapting the practices for use with students with disabilities and English learners. While the guide uses specific examples to illustrate the recommendations and steps, there are a wide range of activities teachers could use to implement the recommended practices.

Professional development providers, program developers, and researchers can also use this guide. Professional development providers can use the guide to implement evidence-based instruction and align instruction with state standards or to prompt teacher discussion in professional learning communities. Program developers can use the guide to create more effective writing curricula and interventions. Researchers may find opportunities to test the effectiveness of various approaches and explore gaps or variations in the writing instruction literature.

## Teaching Secondary Students to Write Effectively

**November 2016**

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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.

This report is available on the IES website at <http://whatworks.ed.gov>.

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## Teaching Secondary Students to Write Effectively

### Table of Contents

<b>Introduction to the <i>Teaching Secondary Students to Write Effectively</i> Practice Guide</b> . . . . .	<b>1</b>
<b>Recommendation 1.</b> Explicitly teach appropriate writing strategies using a Model-Practice-Reflect instructional cycle . . . . .	<b>6</b>
<b>Recommendation 1A.</b> Explicitly teach appropriate writing strategies . . . . .	<b>7</b>
<b>Recommendation 1B.</b> Use a Model-Practice-Reflect instructional cycle to teach writing strategies . . . . .	<b>19</b>
<b>Recommendation 2.</b> Integrate writing and reading to emphasize key writing features . . . . .	<b>31</b>
<b>Recommendation 3.</b> Use assessments of student writing to inform instruction and feedback . . . . .	<b>43</b>
<b>Glossary.</b> . . . . .	<b>56</b>
<b>Appendix A.</b> Postscript from the Institute of Education Sciences . . . . .	<b>59</b>
<b>Appendix B.</b> About the Authors . . . . .	<b>63</b>
<b>Appendix C.</b> Disclosure of Potential Conflicts of Interest . . . . .	<b>65</b>
<b>Appendix D.</b> Rationale for Evidence Ratings. . . . .	<b>66</b>
<b>References.</b> . . . . .	<b>80</b>
<b>Endnotes</b> . . . . .	<b>84</b>

## List of Tables

<b>Table 1.</b> Recommendations and corresponding levels of evidence . . . . .	<b>4</b>
<b>Table A.1.</b> Institute of Education Sciences levels of evidence for What Works Clearinghouse practice guides . . . . .	<b>61</b>
<b>Table D.1.</b> Description of outcome domains . . . . .	<b>67</b>
<b>Table D.2.</b> Studies providing evidence for Recommendation 1 . . . . .	<b>70</b>
<b>Table D.3.</b> Studies providing evidence for Recommendation 2 . . . . .	<b>74</b>
<b>Table D.4.</b> Studies providing evidence for Recommendation 3 . . . . .	<b>78</b>

## List of Figures

<b>Figure 1.1.</b> Components of the writing process . . . . .	<b>7</b>
<b>Figure 1.2.</b> The Model-Practice-Reflect cycle . . . . .	<b>19</b>
<b>Figure 2.1.</b> Shared knowledge for writing and reading . . . . .	<b>32</b>
<b>Figure 3.1.</b> The formative assessment cycle . . . . .	<b>43</b>
<b>Figure 3.2.</b> Tailoring instruction at different levels . . . . .	<b>50</b>
<b>Figure 3.3.</b> Levels of feedback . . . . .	<b>52</b>

## List of Examples

<b>Example 1.1.</b> How using the K-W-L strategy during the writing process supports strategic thinking . . . . .	<b>8</b>
<b>Example 1.2a.</b> Sample writing strategies for the planning component of the writing process . . . . .	<b>9</b>
<b>Example 1.2b.</b> Sample writing strategies for the goal setting component of the writing process . . . . .	<b>11</b>
<b>Example 1.2c.</b> Sample writing strategies for the drafting component of the writing process . . . . .	<b>12</b>
<b>Example 1.2d.</b> Sample writing strategies for the evaluating component of the writing process . . . . .	<b>12</b>
<b>Example 1.2e.</b> Sample writing strategies for the revising component of the writing process . . . . .	<b>13</b>
<b>Example 1.2f.</b> Sample writing strategies for the editing component of the writing process . . . . .	<b>14</b>
<b>Example 1.3.</b> Questions to guide strategy selection . . . . .	<b>14</b>
<b>Example 1.4.</b> Questions for understanding the target audience . . . . .	<b>15</b>
<b>Example 1.5.</b> Questions for understanding purpose . . . . .	<b>15</b>
<b>Example 1.6.</b> Adapting an evaluating strategy when writing for different purposes . . . . .	<b>16</b>
<b>Example 1.7.</b> Adapting a persuasive writing strategy when writing essays for different audiences . . . . .	<b>16</b>
<b>Example 1.8.</b> Types of modeling statements . . . . .	<b>20</b>
<b>Example 1.9.</b> Thinking aloud to model a planning and goal setting strategy . . . . .	<b>21</b>
<b>Example 1.10.</b> Practicing modeled writing strategies . . . . .	<b>22</b>
<b>Example 1.11.</b> Model-Practice-Reflect using book club blogs . . . . .	<b>24</b>

## Table of Contents *(continued)*

<b>Example 1.12.</b> Using color-coding to evaluate student writing . . . . .	<b>25</b>
<b>Example 1.13.</b> Using rubrics to evaluate writing . . . . .	<b>27</b>
<b>Example 2.1.</b> Using cognitive-strategy sentence starters to generate or respond to texts . . . . .	<b>34</b>
<b>Example 2.2.</b> Story impressions for English language arts . . . . .	<b>35</b>
<b>Example 2.3.</b> A writing and reading activity for synthesizing multiple texts . . . . .	<b>35</b>
<b>Example 2.4.</b> A writing and reading activity for synthesizing multiple perspectives . . . . .	<b>36</b>
<b>Example 2.5.</b> Key features of exemplars for different text types . . . . .	<b>36</b>
<b>Example 2.6.</b> Using editorials as peer and professional exemplars of persuasive texts . . . . .	<b>38</b>
<b>Example 2.7.</b> Teaching features distinguishing strong and weak student exemplars . . . . .	<b>38</b>
<b>Example 2.8.</b> Demonstrating that key features of exemplars vary by form, purpose, and audience . . . . .	<b>39</b>
<b>Example 2.9.</b> A Copy/Change activity to help students emulate specific features . . . . .	<b>40</b>
<b>Example 2.10.</b> A sample student-created rubric from strong and weak exemplar texts . . . . .	<b>41</b>
<b>Example 3.1.</b> Sample on-demand prompts for different disciplines . . . . .	<b>46</b>
<b>Example 3.2.</b> A graphic organizer to assess learning and determine action steps . . . . .	<b>47</b>
<b>Example 3.3.</b> Sample regular classroom writing tasks for assessment, by genre . . . . .	<b>48</b>
<b>Example 3.4.</b> Math teachers in different grades collaborate on assessment . . . . .	<b>49</b>
<b>Example 3.5.</b> Teacher teams in the same grade collaborating to analyze student work . . . . .	<b>51</b>
<b>Example 3.6.</b> A sample tracking sheet to monitor student progress over time. . . . .	<b>54</b>

# Introduction

## Introduction to the *Teaching Secondary Students to Write Effectively* Practice Guide

Improving students' writing skills helps them succeed inside and outside the classroom. **Effective writing** is a vital component of students' literacy achievement, and writing is a critical communication tool for students to convey thoughts and opinions, describe ideas and events, and analyze information. Indeed, writing is a life-long skill that plays a key role in post-secondary success across academic and vocational **disciplines**.<sup>1</sup>

The nature of writing and writing instruction is changing. Technology, such as word processing and other forms of electronic communication, plays an increasingly important role in how students learn and practice writing in and out of the classroom. In addition, best practices in writing instruction have shifted to include integrated interventions that involve many complementary instructional practices.

This practice guide presents three **evidence-based** recommendations for helping students in grades 6–12 develop effective writing skills. Each recommendation provides teachers with specific, actionable guidance for implementing practices in their classrooms. The guide also provides a description of the evidence supporting each recommendation, examples to use in class, and the panel's advice on how to overcome potential implementation obstacles. This practice guide was developed in conjunction with an expert panel, combining the panel's expertise with the findings of existing rigorous research. Throughout the guide, statements supported by evidence are denoted with references.

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

Look for this icon for ways to incorporate technology during writing instruction.



### Overarching themes

Each recommendation provides instructional advice on a specific topic; together, the three recommendations presented in this practice guide highlight two important themes for delivering effective writing instruction.

- **Writing encourages critical thinking.** Constructing, articulating, and analyzing their own thoughts in writing requires students to think critically about their ideas and how to convey them based on their

### What is effective writing?

#### Effective writing:

- **Achieves the writer's goals.** These goals can be set by the writer or teacher, or through collaboration between the writer, teacher, and/or peers.
- **Is appropriate for the intended audience and context.** For example, a persuasive text written for a school newspaper may look different than one written for an online forum.
- **Presents ideas in a way that clearly communicates the writer's intended meaning and content.** The writer's ideas are well-organized and clear to the reader, and expressed effectively.
- **Elicits the intended response from the reader.** For example, a persuasive text compels the reader to take action, whereas a mystery novel elicits feelings of suspense or surprise from the reader.



goals and the intended audience. Writing challenges students to understand, evaluate, and synthesize text, ideas, and concepts.<sup>2</sup> Furthermore, approaching writing tasks strategically (that is, with a series of structured actions for achieving their writing goals) facilitates the development of sound arguments supported by valid reasoning.

- **Writing occurs in every discipline.** Writing spans classrooms and discipline areas. Writing is a key component of English language arts classrooms, and secondary students on average write more for their English classes than they do for any other class.<sup>3</sup> However, students write more for other disciplines combined than they do for English language arts.<sup>4</sup>

The panel believes these two themes are related—critical thinking occurs in every discipline and writing leads students to think critically about content and ideas presented in all classes. These themes underlie the recommendations in this practice guide.

**"Scientists, artists, mathematicians, lawyers, engineers—all 'think' with pen to paper, chalk to chalkboard, hands on terminal keys."**

*Young and Fulwiler (1986)*

### Overview of the recommendations

**Recommendation 1.** Explicitly teach appropriate writing strategies using a Model-Practice-Reflect instructional cycle.

- **Recommendation 1a.** Explicitly teach appropriate writing strategies.
  1. Explicitly teach strategies for planning and goal setting, drafting, evaluating, revising, and editing.
  2. Instruct students on how to choose and apply strategies appropriate for the audience and purpose.

- **Recommendation 1b.** Use a Model-Practice-Reflect instructional cycle to teach writing strategies.

1. Model strategies for students.
2. Provide students with opportunities to apply and practice modeled strategies.
3. Engage students in evaluating and reflecting upon their own and peers' writing and use of modeled strategies.

**Recommendation 2.** Integrate writing and reading to emphasize key writing features.

1. Teach students to understand that both writers and readers use similar strategies, knowledge, and skills to create meaning.
2. Use a variety of written exemplars to highlight the key features of texts.

**Recommendation 3.** Use assessments of student writing to inform instruction and feedback.

1. Assess students' strengths and areas for improvement before teaching a new strategy or skill.
2. Analyze student writing to tailor instruction and target feedback.
3. Regularly monitor students' progress while teaching writing strategies and skills.

### Summary of supporting research

Practice guide staff conducted a thorough literature search, identified eligible studies, and reviewed those studies using the What Works Clearinghouse (WWC) group design standards. The literature search focused on studies published between 1995 and 2015. This time frame was established so that the review would examine practices conducted under conditions similar to those in schools today and to define a realistic scope of work. In addition to the literature search of electronic databases and the WWC studies database, members of the expert panel recommended additional studies for review.

A search for literature related to secondary writing instruction published between 1995 and 2015 yielded more than 3,400 citations. Panelists recommended approximately 300 additional studies not identified in the literature search. The studies were screened for relevance according to eligibility criteria described in the practice guide protocol.<sup>5</sup> Studies that did not include populations of interest, measure relevant outcomes, or assess the effectiveness of replicable practices used to teach secondary writing were excluded. Of the eligible studies, 55 studies used randomized controlled trials or quasi-experimental designs to examine the effectiveness of the practices found in this guide's recommendations.<sup>6</sup> From this subset, 15 studies met the WWC's rigorous group design standards. Studies were classified as having a positive or negative effect if the findings were either statistically significant (unlikely to occur by chance) or substantively important (producing considerable differences in outcomes).

Consistent with the panel's belief that the recommended practices should be integrated with one another, many studies examined **multi-component interventions**. These interventions included practices from multiple recommendations or practices not 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. All studies used to support Recommendation 3 examined interventions that included components related to other recommendations or components unrelated to any recommendation. However, most studies used to support Recommendations 1 and 2 examined practices related to only one recommendation.

Throughout the guide, **bolded citations** indicate that a study meets WWC group design standards.

The studies examined interventions appropriate for general education students. Five studies included ability or language subgroups, but the interventions in these studies were carried out in general education classrooms or were determined by the panel to be appropriate for general education students.

### Study Eligibility Criteria

*For more information, see the review protocol.*

**Time frame:** Published between January 1995 and March 2015; earlier or later work was reviewed if recommended by the panel

**Location:** Study could have been conducted in any country

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

While the great majority of reviewed studies were conducted within the United States and with English speaking students, three studies were conducted outside the United States, with non-English speaking students. The panel believes that the locations of the studies (Germany and Portugal) have educational systems and contexts similar to the United States, and that writing strategies in German and Portuguese in these settings are similar to those used in English in the United States. The panel believes that conclusions from these studies may be relevant to U.S. schools and students.

Studies supporting the recommendations examined writing knowledge and skill outcomes in the following nine domains: (1) audience, (2) genre elements, (3) organization, (4) sentence structure, (5) use of evidence, (6) word choice, (7) writing output, (8) writing processes, and (9) overall writing quality. (For more information about the domains and how outcomes were classified into the domains, see Appendix D.)

Studies showed that practices in all three recommendations improved outcomes in the overall writing quality domain. The

supporting studies also found that practices in each of the recommendations improved outcomes in other writing domains. Practices in Recommendation 1 improved outcomes in the genre elements, organization, word choice, writing processes, and writing output domains. The evidence supporting Recommendation 2 included positive effects in the genre elements and word choice domains. One study that supported Recommendation 1 found indeterminate effects for an outcome in the audience domain,<sup>7</sup> and one study that supported both Recommendations 1 and 2 found inconclusive evidence for an outcome in the sentence structure domain.<sup>8</sup> Practices in Recommendation 3 improved outcomes in three additional domains: audience, organization, and use of evidence.

The **level of evidence** assigned to each recommendation indicates the strength of the evidence for the effect of the practices on student achievement, based on studies published since 1995 or published prior to 1995 and recommended by the panel.

The panel and Mathematica WWC staff assigned a level of evidence to each recommendation based on an assessment of the relevant evidence supporting each recommendation. 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		
	Strong Evidence	Moderate Evidence	Minimal Evidence
1. Explicitly teach appropriate writing strategies using a Model-Practice-Reflect instructional cycle.	◆		
2. Integrate writing and reading to emphasize key writing features.		◆	
3. Use assessments of student writing to inform instruction and feedback.			◆

## How to use this guide

This guide provides secondary teachers in all disciplines and administrators with instructional recommendations that can be implemented in conjunction with existing standards or curricula. The guide does not recommend a particular curriculum.

Teachers can use the guide when planning instruction to support the development of writing skills among students in grades 6–12 in diverse contexts. The panel believes that the three recommendations complement one another and can be implemented simultaneously. The recommendations allow teachers

the flexibility to tailor instruction to meet the needs of their classrooms and students, including adapting the practices for use with students with disabilities and English learners.<sup>9</sup> While the guide uses specific examples to illustrate the recommendations and steps, there are a wide range of activities teachers could use to implement the recommended practices.

Professional development providers, program developers, and researchers can also use this guide. Professional development providers can use the guide to implement evidence-based instruction or to prompt teacher discussion in professional learning communities. Program developers can use the guide to

create more effective writing curricula and interventions. Researchers may find opportunities to test the effectiveness of various approaches and explore gaps or variations in the writing instruction literature.

### **Alignment with existing practice guides**

The recommendations in this guide are appropriate for secondary teachers in all disciplines in grades 6–12. Teachers in elementary grades should review the *Teaching Elementary Students to be Effective Writers* practice guide that focuses on students in kindergarten through 5th grade (or 6th-grade students in an elementary school setting).<sup>10</sup>

Although both guides recommend similar broad approaches—for example, writing strategies are helpful for both elementary and secondary students—the specific recommended practices, examples, and potential obstacles are targeted for the respective student populations. In contrast to the *Teaching Elementary Students to be Effective Writers* practice guide, which in part focuses on basic skills and fostering a supportive environment for writing, this practice guide recommends practices appropriate for secondary school, where writing is a common component of diverse disciplines. The supporting evidence for each guide does not overlap, as the evidence in this guide is based only on studies with secondary students.



# Recommendation 1



## Explicitly teach appropriate writing strategies using a Model-Practice-Reflect instructional cycle.

*This recommendation suggests teaching writing strategies in two ways: (a) through explicit or direct instruction and (b) through a Model-Practice-Reflect instructional cycle. Recommendation 1a suggests explicitly teaching students different strategies for components of the **writing process**. Students learn how to select a strategy, how to execute each step of the strategy, and how to apply the strategy when writing for different audiences and purposes. Recommendation 1b discusses using a Model-Practice-Reflect instructional cycle to teach writing strategies. Students observe a strategy in use, practice the strategy on their own, and evaluate their writing and use of the strategy. Teachers should use both approaches when teaching students to use writing strategies.*

**Writing strategies** are structured series of actions (mental, physical, or both) that writers undertake to achieve their goals. Writing strategies can be used to plan and set goals, draft, evaluate, revise, and edit.

### Summary of evidence: **Strong Evidence**

Eleven studies contributed to the level of evidence for this recommendation.<sup>11</sup> Six studies meet WWC group design standards without reservations,<sup>12</sup> and five studies meet

WWC group design standards with reservations (see Appendix D).<sup>13</sup> All of the studies found positive effects on at least one writing outcome: positive outcomes were found in the overall writing quality, genre elements, organization, word choice, writing output,

## Recommendation 1 (continued)

and writing process domains. The evidence largely supports both parts of the recommendation, with eight studies examining both the explicit instruction of writing strategies (Recommendation 1a) and the use of a Model-Practice-Reflect instructional cycle for teaching writing strategies (Recommendation 1b).<sup>14</sup> Seven studies provided a direct test of the recommendation, examining some or all of the recommended practices without other important practices.<sup>15</sup> The other four studies examined interventions that included additional practices such as the integration of reading and writing instruction (Recommendation 2),<sup>16</sup> but the panel determined that the practices from Recommendation 1 were a critical part of the interventions. The studies were conducted in regions across the United States and in countries with similar educational contexts and written languages. The participating students were in grades 6–12, and the samples were diverse, including general education students, English learners, and students with learning disabilities.

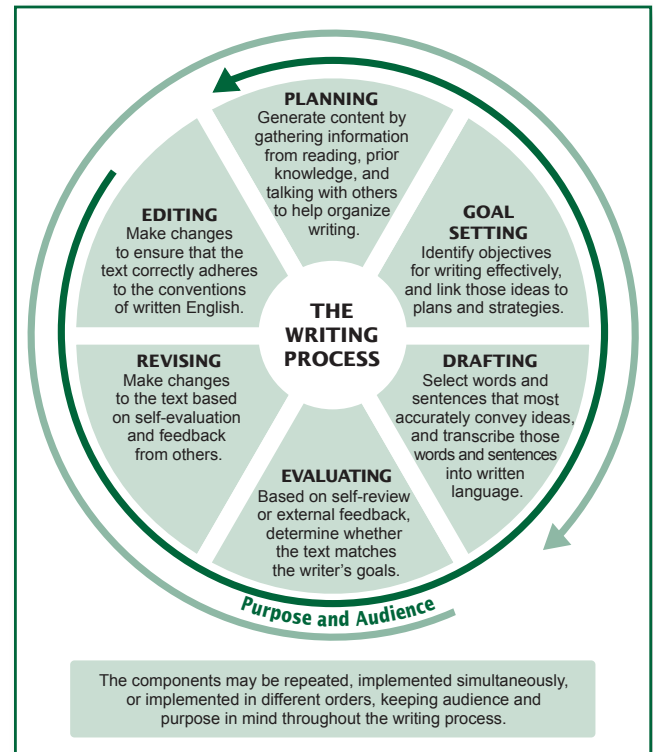
This recommendation has a strong level of evidence because the supporting studies have high internal and external validity, and they found consistent positive effects on writing outcomes. More than half of the studies supporting this recommendation provided a direct test of the recommendation, while the others examined interventions in which the recommended practices were critical components.

### Recommendation 1a.

#### Explicitly teach appropriate writing strategies.

Effective writers use **strategies** during all components of the writing process (Figure 1.1).<sup>17</sup> An individual strategy can support one component of the process or span multiple components. Throughout this process, strategies help students organize the ideas, research, and information that will inform

**Figure 1.1. Components of the writing process**



their writing. During the drafting stage, strategies help students create strong sentences and well-structured paragraphs. Strategies provide students with tools to evaluate, revise, and edit their plans and their writing.

This part of the recommendation focuses on teaching cognitive strategies, both to improve students' writing and encourage **strategic thinking**. Teaching students to use cognitive strategies is one way to develop their strategic thinking skills, ultimately helping them to write more effectively. Example 1.1 illustrates how using one cognitive strategy (Know-Want to Know-Learn or K-W-L) can lead to strategic thinking. Teachers need to explicitly instruct students on writing strategies and how to select the most appropriate strategy. Eventually, as students become experienced writers, they will use these strategies automatically to write effectively.

### EXAMPLE 1.1.

#### How using the K-W-L strategy during the writing process supports strategic thinking<sup>18, 19</sup>

The cognitive writing strategy K-W-L helps students identify the gaps in their prior knowledge and guides them through what they are reading and writing. When using a **K-W-L** strategy to plan a research paper, students can complete the first two columns while doing their research and the last column after completing their research.

- What I Already **K**now About This Topic
- What I **W**ant to Know About This Topic
- What I **L**earned About This Topic

Using a strategy such as K-W-L fosters students' strategic thinking by enabling them to approach a research paper in a purposeful way. They can summarize their prior knowledge (K column), develop research questions (W column), and track new information they gather (L column).

### How to carry out the recommendation

#### 1. Explicitly teach strategies for planning and goal setting, drafting, evaluating, revising, and editing.

To write effectively, students must implement a writing process involving several components. Because writing is an iterative process, students may implement these components in a different order and may implement some of the components simultaneously (as illustrated by the clockwise and counter-clockwise arrows in Figure 1.1). Strategies help students direct their thinking as writers.

Introduce students to different strategies for each component of the writing process so they understand there is more than one way to approach each component. Students do not need to memorize all the possible writing strategies and their steps. Instead, students should understand the purpose of writing strategies and know how to select an appropriate strategy.

Teach students the steps of a strategy and how to execute each step. Teachers can identify effective strategies through professional learning communities, like the National Writing

Project and National Council of Teachers of English, or publications like *Writing Next*.<sup>20</sup>

Example 1.2 presents several writing strategies for each component of the writing process. The example describes how to execute each strategy and, when available, includes a reference to studies or other resources where that strategy was used. The example also notes whether a strategy is relevant to all types of writing or particular types or **genres** (e.g., persuasive or narrative). Genre-specific strategies help students focus on the basic purpose, structure, and elements of a specific type of writing, whereas general strategies can be used more broadly. Both types of strategies can be useful to students.

Modify strategy instruction based on skill level. For example, when working with struggling students or students who are new to a particular strategy, begin by presenting a basic version of a strategy (e.g., setting one goal for essay length). When students become

## Recommendation 1 (continued)

more comfortable with a strategy, challenge them to extend the strategy further (i.e., setting additional or more difficult goals.)

Teach students how the different components of the writing process work together so that they can flexibly move between components of

the process, returning to earlier components as needed to improve their writing. For example, students may change their goals after evaluating their first draft, or they may go back to drafting after revising their writing. Or, after a peer revising activity, students may discover they need to plan for and draft additional text.

### EXAMPLE 1.2a.

#### Sample writing strategies for the planning component of the writing process<sup>2</sup>

##### Writing Strategies for Most Relevant Genres and How to Execute Them

###### **STOP**<sup>22</sup>, *Persuasive genre*

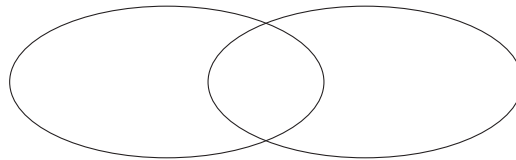
- Suspend judgment and brainstorm ideas for and against the topic.
- Take a side on the topic.
- Organize ideas. Place a star next to the ideas you plan to use and those you plan to refute. Number the order in which you want to introduce them.
- Plan more as you write

###### **STOP and AIM**<sup>23</sup>, *Persuasive genre Narrative genre*

- Apply **STOP** (see above) and determine how to:
- Attract the reader's attention at the start of the paper.
- Identify the problem so the reader understands the issues.
- Map the context of the problem. Provide background information needed to understand the issues.

###### **Venn diagram**, *Any genre*

- Use a Venn diagram as a planning tool when writing a compare/contrast essay. Each circle can represent a different topic, character, or position. The parts of the diagram that overlap can represent the similarities between the two, while the parts of the diagram that do not overlap can represent the differences. Use the main ideas in each section to guide the major topics in the essay.



###### **PLAN**<sup>25</sup>, *Informational genre and Persuasive genre*

- Pay attention to the writing assignment by identifying what you are asked to write about and how you should develop your essay.
- List your main ideas after gathering and evaluating ideas.
- Add supporting ideas (e.g., details, examples, elaborations, evidence) to each main idea. Consider whether each main idea is still relevant.
- Number the order in which you will present your ideas.

(continued)



## Recommendation 1 (continued)

### Do/What<sup>24</sup>, Any genre

Create a Do/What chart to thoroughly examine a writing prompt before beginning an assignment. Circle all verbs in the writing prompt that describe what you are being asked to **do**. Underline the words that describe **what** the task is. Then, create a chart to generate a roadmap for the writing assignment.

Select one important current event to write a news article about. Describe what happened during the event, who was there, and when it occurred. Your lead statement will communicate the most important points to the reader. Use quotes from eyewitnesses to support your reporting.

DO	WHAT
Select	One important current event
Write	A news article
Describe	What happened during the event, who was there, and when it occurred
Use	Quotes from eyewitness



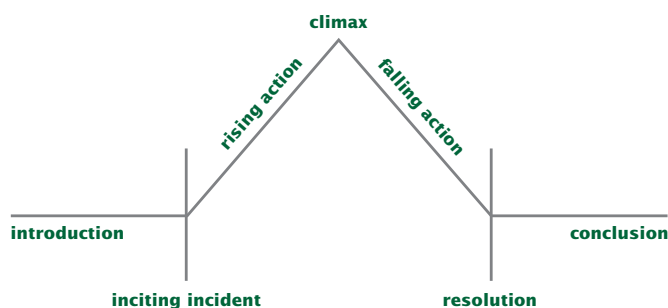
### K-W-L, Informational genre

Create a K-W-L chart using a word processing program, where the first column represents what you already know about your topic, the second column represents what you want to know about the topic, and the third column represents what you learned about the topic. For example, when planning to write a paper on genetics for biology class, you can begin by recording what you know about genetics. Then, record what you want to know about genetics and use those questions to guide your research. After completing your research, compile what you learned while collecting additional information. Use all three columns to organize your ideas for your paper.

K	W	L
What I Already <b>K</b> now About This Topic	What I <b>W</b> ant to Know About This Topic	What I <b>L</b> earned About This Topic

### Plot diagram/Freytag pyramid, Narrative genre

To develop the plot of a story, complete each section of a Freytag pyramid prior to writing: the exposition or introduction, inciting incident, rising action, climax, falling action, and resolution



(continued)



### **Outline, Any genre**

Use the outline feature in a word processing program to organize main ideas and supporting details. Use the first-level headings of the outline to write out your main ideas and arrange them in a logical order. Use second-level headings to include supporting details, figures, tables, and other points to support each main idea.

1. Main idea 1
  - a. Supporting idea 1
  - b. Supporting idea 2
  - c. Figure 1
2. Main idea 2
  - a. Supporting idea 1
  - b. Supporting idea 2
  - c. Supporting idea 3
3. Main idea 3
  - a. Supporting idea 1
  - b. Supporting idea 2
  - c. Table 1

### **EXAMPLE 1.2b.**

#### **Sample writing strategies for the goal setting component of the writing process<sup>26</sup>**

##### **Writing Strategy for Most Relevant Genres and How to Execute**

##### **Set goals<sup>27</sup>, Any genre**

- Provide students with a list of writing goals that represent the qualities of good writing and the criteria on which they will be evaluated. This might include goals for maintaining control of the topic, organization, voice, use of mature vocabulary, and use of varied and complex sentences to meet the writing purpose. Students should choose one or more goals to work on as they write.

##### **Individualize goals<sup>28</sup>, Any genre**

- Provide students with a list of individualized writing goals and have them select one or more goals to focus on while writing. For a persuasive essay, for example, one student's goal may be to write an essay that includes three reasons to support his or her point of view. Alternatively, the goal might be to reject three reasons that are not consistent with his or her point of view. The goals should be individualized so that they are more ambitious than the student's performance on a previous essay, but not so high as to be outside the student's capabilities.

##### **SCHEME<sup>29</sup>, Any genre**

- **Skills check.** Complete an inventory that focuses on what you are currently doing well when writing and what you need to improve on.
- **Choose goals.** Based on the skills check, develop goals for your next writing assignment (e.g., find a quiet place to write, reread my paper before turning it in, and get all the information I need before I write).
- **Hatch a plan** for how to meet your specified goals.
- **Execute the plan** for achieving your goals.
- **Monitor progress** toward achieving your goals.

## Recommendation 1 (continued)

### EXAMPLE 1.2c.

#### Sample writing strategies for the drafting component of the writing process<sup>32</sup>

##### Writing Strategy for Most Relevant Genres and How to Execute

###### **WRITE**<sup>30</sup>, *Informational genre and Persuasive genre*

- Work from the ideas you developed during the planning component to develop your thesis statement or claim.
- Remember to use the writing goals you established before starting to write.
- Include transition words for each paragraph.
- Try to use different kinds of sentences.
- Use **Exciting**, interesting words.

###### **DARE**<sup>31</sup>, (used with STOP or STOP and AIM), *Persuasive genre and Argumentative genre*

- **Develop** a topic statement to support your thesis as you write.
- **Add** supporting ideas to support your thesis.
- **Reject** possible arguments for the other side.
- **End** with a conclusion.

###### **Mini arguments**, *Persuasive genre and Argumentative genre*

- When drafting an argumentative essay, begin by drafting a claim and identifying two to four pieces of evidence to support that claim. This will serve as the first draft for the essay. Write a second draft after using the Ranking the Evidence strategy (see Example 1.2d ).

###### **3-2-1**, *Informational genre and Persuasive genre*

- Use a 3-2-1 strategy to develop a first draft of a paper. Write out three things you learned, two things you would like to learn more about, and one question you have on the topic.

### EXAMPLE 1.2d.

#### Sample writing strategies for the evaluating component of the writing process<sup>33</sup>

##### Writing Strategy for Most Relevant Genres and How to Execute

###### **Rank the evidence**, *Persuasive genre and Argumentative genre*

After drafting a mini-argument “(see Example 1.2c), trade your draft with a peer. Your peer will rank the evidence from 1 to 4 based on how logical and relevant each piece is. You will then meet in pairs to discuss the ranking prior to writing a second draft.

###### **CDO—sentence level**<sup>34</sup>, *Any genre*

Compare, **D**iagnose, and **O**perate by reading a sentence and deciding if the sentence works. If not, diagnose the problem by asking why the sentence doesn’t work. For example:

- Does it not sound right?
- Is it not communicating the intended meaning?
- Is it not useful to the paper?
- Will the reader have trouble understanding it?
- Will the reader be interested in what it says?
- Will the reader believe what it says?

Next, decide how you will change the sentence.

(continued)

## Recommendation 1 (continued)



CDO—text level<sup>35</sup>, *Any genre*

**Compare, Diagnose, & Operate** by reading through the paper and asking if any of the following example diagnoses apply:

- There are too few ideas
- Part of the paper doesn't belong with the rest
- Part of the paper is not in the right order

Next, decide how you will rectify each situation identified.

**Color coding**<sup>36</sup>, *Any genre*

Using different colored fonts in a word processing program or using different highlighters, color code your essay to identify the use of different writing elements. For example, use different colors to note where you summarize the plot, use evidence, and use commentary.

### EXAMPLE 1.2e.

#### Sample writing strategies for the revising component of the writing process<sup>40</sup>

##### Writing Strategy for Most Relevant Genres and How to Execute

**Peer feedback**<sup>37</sup>, *Any genre*

- Read another student's paper and identify your favorite sentence and favorite word in the paper. Identifying a favorite sentence or word supports the writer on the kinds of sentences and word choices that he or she should continue to make. This type of peer response emphasizes the importance of offering specific feedback.

**WIRMI**<sup>38</sup>, *Any genre*

- After composing an essay, write a “**What I Really Mean Is...**” statement and keep a copy of it. Have a partner read the draft and write a “**What I Think You Really Meant to Say Was...**” statement in response to the essay. Compare your WIRMI statement to your peer's response to determine whether the paper communicates effectively. Make revisions accordingly.

**STAR**<sup>39</sup>, *Any genre*

Reread your essay and code any necessary corrections with S, T, A, or R, as follows:

- **S**ubstitute overused words with precise words, weak verbs with strong verbs, weak adjectives with strong adjectives, and common nouns with proper nouns.
- **T**ake out unnecessary repetitions, irrelevant information, or information that belongs elsewhere.
- **A**dd details, descriptions, new information, figurative language, clarification of meaning, or expanded ideas.
- **R**earrange information for a more logical flow.

Then, make revisions accordingly.



## EXAMPLE 1.2f.

### Sample writing strategies for the editing component of the writing process<sup>41</sup>

#### Writing Strategy for Most Relevant Genres and How to Execute

**COPS**<sup>42</sup>, *Any genre*

- Have I **C**apitalized the first word of sentences and proper names?
- How is the **O**verall appearance?
- Have I put in commas and end **P**unctuation?
- Have I **S**pelled all words correctly?

**Job cards**<sup>43</sup>, *Any genre*

Divide students into small groups and assign each student in the group a different “job card.” The card will describe that student’s job when editing the papers of the other students in the group. For example, one person’s job may be to look for spelling errors, another person’s job may be to ensure the paper contains strong verbs and consistent verb tense, and a third person’s job may be to verify that the paper uses quotation marks properly throughout. Students should continue to trade papers within their small groups until they have performed their job on each student’s paper.

**Peer editing**, *Any genre*

Trade papers with a classmate and edit your peer’s paper. Focus on one or two key areas during your review. For example, you may focus on whether the writer’s ideas are well-organized and clear, word choice is appropriate for the target audience, or thesis statement makes a strong claim.

## 2. Instruct students on how to choose and apply strategies appropriate for the audience and purpose.

After students learn different strategies, teach them to evaluate the available strategies and choose the most appropriate one for each situation. Provide students with a list of questions to consider when evaluating and selecting a writing strategy (see Example 1.3). Consider adding an exercise to a writing assignment that prompts students to describe the strategy they used for the assignment, what influenced their selection, and how the strategy helped them (or failed to help them) to write for their audience or purpose.

To promote the critical selection of strategies instead of the rote use of strategies, identify opportunities for students to use writing strategies in new ways and in different contexts. For example, challenge students to use a familiar strategy for a writing assignment in another discipline or at home. Have students discuss and think about how they need to

modify a strategy for a new task, discipline, or situation. Students can then try their modified strategy and consider how well their adaptation worked.

## EXAMPLE 1.3.

### Questions to guide strategy selection

- What goals do I need to set and accomplish to write for this audience or purpose?
- What writing strategies do I know work well when writing for this audience or purpose?
- What do I know about this assignment that would help inform my strategy selection?
- When do I use this strategy? When I am planning? Drafting? Revising?

## Recommendation 1 *(continued)*

After students have chosen a strategy, teach them how to implement it with the specific audience and purpose in mind. Although a particular strategy might be most effective when writing for a specific audience or purpose, typically strategies can be effective with diverse audiences and purposes. Because the audience and purpose influence many components of the writing process, students should identify them prior to applying their writing strategies.

**Audience.** Before a new writing assignment, prepare students to write for the target audience. Have students identify the target audience and engage them in brainstorming what they know about writing for that audience. Then, have students discuss how this knowledge will affect their writing and why.

When students are writing for a new audience, provide opportunities to learn about that audience first. For example, if students are writing an opinion piece for the local newspaper, teachers can present demographic information of the newspaper's readership to the class, invite a newspaper subscriber to talk with the class, or hold a discussion on how this audience may differ from a familiar audience. Students may need to conduct additional background research on the target audience prior to developing their writing plans.

If students have written for an audience previously, they can use those experiences to inform the current writing assignment. Example 1.4 provides questions students can ask themselves to confirm their understanding of the audience.

### EXAMPLE 1.4.

#### Questions for understanding the target audience

- Who is my audience?
- What does my audience already know or understand about this topic?
- What does my audience need to know?
- What type of information or argument would my audience respond to?
- What visual media might help me to persuade my audience?
- Where in my writing might the audience be misled?

**Purpose.** Help students identify the purpose for their writing during the planning component. Teach students to look for clues in the assignment's prompts or instructions that signal the purpose of the writing

assignment. Share examples of written work to illustrate text written for different purposes. Example 1.5 provides questions students can ask themselves to confirm their understanding of purpose.

### EXAMPLE 1.5.

#### Questions for understanding purpose

- What are the aspects of effective writing for this purpose?
- What are my goals for this writing assignment?
- Am I writing to inform or persuade?
  - If I'm writing to be informative, is the purpose to reflect, explain, summarize, or analyze?
  - If I'm writing to be persuasive, through what channel am I to persuade my audience: an editorial, a speech, a blog, an essay, or something else?

## Recommendation 1 (continued)

Finally, teach students to adapt their strategies depending on the audience and purpose. For example, when students use a planning strategy to write a persuasive essay, they should keep in mind that the appropriate supporting evidence will depend upon the audience and thus, they should carry out the planning strategy differently based on the audience. For a writing assignment in a social studies class, the strongest supporting evidence may be quotes from historical figures and events,

while the strongest supporting evidence for an assignment in a science class may be results and statistics from a science experiment (rather than, for example, quotes from a scientist). Example 1.6 challenges students to use the same strategy to evaluate an informative essay and a persuasive essay. Example 1.7 illustrates an assignment that challenges students to write two persuasive essays on the same topic for two different audiences.

### EXAMPLE 1.6.

#### Adapting an evaluating strategy when writing for different purposes

Writing prompt: *Evaluate an informative essay and a persuasive essay that you completed this semester. Use the Compare-Diagnose-Operate strategy to evaluate both essays.*

##### Informative essay

Read through your paper and ask if any of the following apply (Compare):

- The main topic of my paper is unclear.
- I present too few ideas on the topic.
- Part of my paper goes off topic.
- I don't provide enough information about some ideas.

Next, decide how you will rectify each issue identified (Diagnose) and implement your revision (Operate).

##### Persuasive essay

Read through your paper and ask if any of the following apply (Compare):

- My claim or position is unclear.
- Some of the ideas supporting my position are not convincing.
- I do not address ideas that refute my claim.
- Part of my paper doesn't belong with the rest.

Next, decide how you will rectify each issue identified (Diagnose) and implement your revision (Operate).

### EXAMPLE 1.7.

#### Adapting a persuasive writing strategy when writing essays for different audiences<sup>44</sup>

Writing prompt: *Take a stand on an issue that is important to you. Write two brief essays: one to persuade your friends of your position and one to persuade the local city council of your position. Use the same planning strategy (PLAN) for both essays.*

##### PLAN

**Pay attention** to the writing assignment by identifying your topic and how you should develop your essay.

**List** your main ideas after gathering and evaluating ideas.

**Add** supporting ideas (e.g., details, examples, elaborations, and evidence) to each main idea. Consider whether each main idea is still relevant.

**Number** the order in which you will present your ideas.

*A student's use of the PLAN strategy is illustrated for each essay on the **next two pages**.*

(continued)

*My friends may not know much about the process for creating a new park or the funding required. I need to persuade them to take action and give them clear directions on how to do so: sign the petition and write personal letters to the city council.*

**P**

**PAY** attention to the writing assignment by identifying what you are to write about and how you should develop your essay.

**Key topic**  
**Creation of a new community park**

**Audience: My friends**

**L**

**LIST** your main ideas after gathering and evaluating ideas.

**1** The park will not be built without community support.

**3** John Smith, local sports legend, supports the park.

**2** The park will be a great place to practice sports and hang out after school.

**A**

**ADD** supporting ideas (e.g., details, examples, elaborations, and evidence) to each main idea. Consider whether each main idea still is relevant.

**1** For the last four community proposals, the city council approved the two that had community support and voted down the two that did not have community support.

**1** He promised he would come to the park's ribbon-cutting ceremony when it opened.

**2** The park will offer running and biking trails, as well as athletic fields, basketball courts, and tennis courts.

**N**

**NUMBER** the order in which you will present your ideas.

**2** You can demonstrate your support by writing letters to the city council and/or signing the park petition.

**2** Students could meet him and get his autograph at the ribbon-cutting ceremony.

**1** The high school doesn't allow students to practice sports past 4:00 p.m. or on the weekends; the park would be open until 9:00 p.m. each day.

*(continued)*

*The city council knows about the process for creating a new park and how much it would cost, but they may want to know more about the community's recreational needs and how many people support this idea. I need to persuade them to vote to approve the proposal to build the park.*

**P**

**PAY** attention to the writing assignment by identifying what you are to write about and how you should develop your essay.

**Key topic**  
**Creation of a new community park**

**Audience: The city council**

**L**

**LIST** your main ideas after gathering and evaluating ideas.

- 3** Most high school students support the park proposal.
- 2** Other groups are willing to split the cost of the park with the city council.
- 4** The proposed location is very convenient.
- 1** Recreation is key to maintaining a healthy lifestyle.

**A**

**ADD** supporting ideas (e.g., details, examples, elaborations, and evidence) to each main idea. Consider whether each main idea still is relevant.

- 1** According to a recent survey, 82% of local high school students support the park proposal.
- 2** The class of 2016 voted to direct the funding for its class gift to the park.
- 1** The only other park in town is located in a completely different neighborhood, so this new park could serve a different geographic area.
- 2** According to the Centers for Disease Control, heart disease is one of the leading causes of death in the United States. Daily exercise is one way to combat heart disease.

**N**

**NUMBER** the order in which you will present your ideas.

- 1** Even though the park will cost \$2 million, a neighboring town is willing to split the cost if their residents can have access to the park too.
- 2** Figure: map of proposed park location.
- 1** Health is a key priority in the council's strategic plan for the city.

## Recommendation 1b.

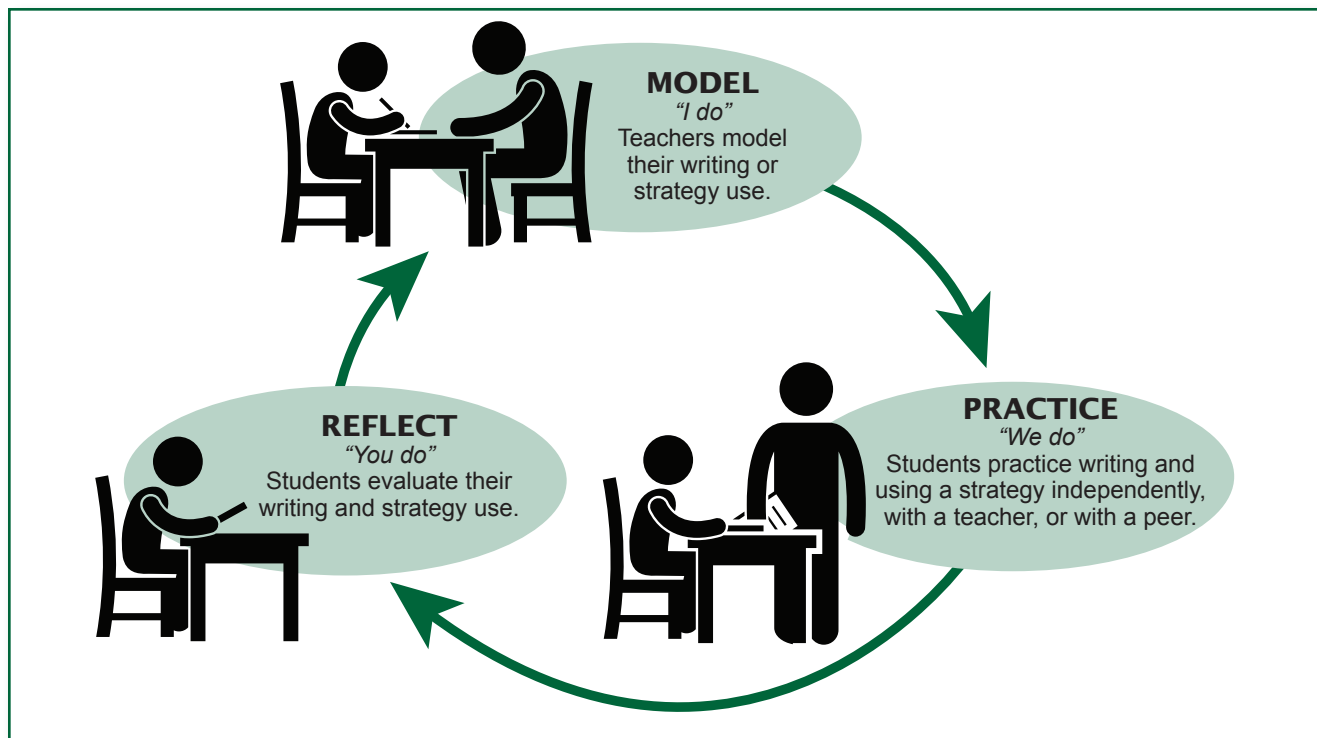
### Use a Model-Practice-Reflect instructional cycle to teach writing strategies.

A Model-Practice-Reflect approach allows students to observe the thinking and actions of a strong writer, attempt to emulate the features of effective writing, and then evaluate their writing according to those features (as illustrated in Figure 1.2). By learning from teachers, peer models, and their own written work, students can internalize the features of

effective writing and develop effective writing strategies, skills, and knowledge. Writing practice without reflection does not provide students with opportunities to internalize important features of writing or think about how to apply learned skills and strategies effectively in new situations.

Teachers should employ a Model-Practice-Reflect approach during writing instruction and classroom activities, gradually transitioning responsibility until students are using writing strategies independently.

Figure 1.2. The Model-Practice-Reflect cycle



### How to carry out the recommendation

#### 1. Model strategies for students.

Teachers and peers can demonstrate and verbally describe the use of effective writing strategies during components of the writing process. This type of modeling illustrates to students the thought process behind selecting and applying each strategy, and it highlights why or how that strategy will help them write effectively. Example 1.8 lists six types

of statements that teachers can use when modeling to share their thinking.

Include modeling statement examples with identified errors and corrections to demonstrate the common challenges students may encounter when implementing a writing strategy and solutions to those challenges.



## Recommendation 1 (continued)

For example, when using the DARE strategy, the following modeling statements may be used: “It looks like I identified a possible opposing viewpoint, but I didn’t refute that viewpoint. I need to reject that argument to

strengthen my own thesis.” When modeling an error, clearly explain to students what is incorrect in the example so they are able to distinguish between the correct and incorrect use of a writing strategy.

### EXAMPLE 1.8.

#### Types of modeling statements<sup>45</sup>

##### Type of Statement and Example

Defining the problem

- “What is it I have to do here?”
- “The assignment is to write a narrative essay.”
- “How should I begin? Maybe I’ll begin by setting the scene.”

Focusing attention and planning

- “I need to develop a plan for approaching this assignment.”
- “What steps can I take to achieve my goals?”

Choosing a strategy and implementing it

- “What strategy should I use?”
- “I’m going to use the STOP strategy. The first step is to...”
- “My goals for this essay are...”

Self-evaluating and error correcting

- “How many pieces of supporting evidence have I used?”
- “Oh, my thesis statement isn’t very strong. I need to improve it.”
- “I should revisit my goals from the planning phase.”
- “I need to confirm I refuted that argument.”
- “The evidence I identified to support my thesis isn’t factual; I need to replace it with real data.”

Coping and self-control

- “I can do this. I just need to focus.”
- “These revisions aren’t too bad. I can address them if I take my time.”

Self-reinforcement

- “I really improved my supporting evidence.”
- “This is a strong conclusion.”

When explaining the steps of a new writing strategy, carefully model how to execute each step (as in Example 1.9). If students struggle with different aspects of the strategy, more modeling may be necessary to demonstrate specific steps. To supplement the modeling,

teachers can post lists of strategies and their steps in the classroom or encourage students to maintain lists of strategies they use.

Peers can also serve as models to other students during both whole-class instruction

### EXAMPLE 1.9.

#### Thinking aloud to model a planning and goal setting strategy

*A science teacher models her thought process as she sets goals and plans for an essay on animal and plant cells.*

#### Modeled Question and Reponse

Who is my target audience?

- *“I am writing for a 7th-grade audience, a class that has not yet learned about animal and plant cells. I should be sure to explain terms that the audience may not know.”*

What goals am I trying to accomplish in my writing?

- *“I need the reader to understand the similarities and differences between animal and plant cells. When planning my essay, I need to think about all of the things I know about animal and plant cells.”*

What strategy could I use to accomplish my goals?

- *“I could make a Venn diagram to organize my thoughts and compare and contrast those kinds of cells. The headings from the diagram could then be separate points in an outline.”*

How should I carry out the strategy?

- *“I think I will list the similarities first and then focus on the differences.”*

and small-group activities. After teachers model their own strategy use during whole-class instruction, have a student share with the class how he or she could use that same strategy for an upcoming assignment. Challenge the class to think of alternative writing strategies and select a student to model a different strategy to the class. To incorporate modeling into small-group activities, pair students after they have completed a writing assignment. Encourage each partner to share his or her writing strategy and model his or her thought process during each component of the writing process.

Adjust the intensity of the modeling to accommodate the needs of students at different skill levels. For example, students who are struggling may need additional

one-on-one modeling or modeling that is specifically related to the writing assignment at hand. The focus of the modeling (such as defining the audience, purpose, or task; walking through the steps of a particular strategy; explaining how to execute a strategy; or reflecting on their own writing) can vary based on what skills and knowledge students need to develop.

As students master writing strategies and skills for the components of the writing process (planning, goal setting, drafting, evaluating, revising, and editing), teachers should gradually lessen their modeling to give students more opportunities to execute strategies on their own. This **gradual release of responsibility** can help students select and implement strategies independently.

### 2. Provide students with opportunities to apply and practice modeled strategies.

Incorporate regular opportunities to practice implementing writing strategies into classroom activities. These opportunities can occur across disciplines to allow students to practice their writing for different topics, audiences, purposes, and tasks. Example 1.10 illustrates how modeling and practicing

writing strategies could span different disciplines. Each activity illustrated can be easily adapted for use in different discipline. For example, the English language arts activities could be used in any disciplines to model planning for a writing assignment.

#### EXAMPLE 1.10.

##### Practicing modeled writing strategies

*In each of the examples below, the teacher models the strategy for the whole class, and then students practice and reflect on the strategies individually or in small groups.*

##### Discipline, Strategy, and Writing Activity

**Math,** Compare-Diagnose-Operate—text level strategy

*A math teacher models thinking about the problem and writing each step of the geometric proof. She evaluates her proof using the Compare-Diagnose-Operate (CDO) strategy. She then asks the students to solve a second problem and to explain in writing how they solved the problem. The teacher then models how she solved the second problem. As a whole class, students discuss what they did well in their written explanations and where they needed to re-think their solution or written explanation using the CDO strategy. Teachers can also share student exemplars.*

**Social studies,** 3-2-1 summary strategy

*A social studies teacher models summarizing a recent political debate that the class watched together online. He identifies three main points or ideas presented during the debate, two disagreements between the candidates, and one question that he has for the candidates. Students then write a summary of the debate using this 3-2-1 strategy and work in small groups to discuss their summaries.*

**Social studies,** Peer revising strategy

*A social studies teacher selects a student to model peer revising with her at the front of the class. The teacher and the student review each other's summaries of current events to identify two strengths and two areas for improvement. The teacher and student discuss the strengths and weaknesses, including strategies for improving the weaknesses. Then, students work in pairs to discuss and review each other's summaries of current events.*

**English language arts,** Outlining strategy

*An English language arts teacher models using an outline to plan for a descriptive analysis on a novel the class recently read. To structure his outline, he creates major headings to discuss the primary characters, setting, plot, themes, and symbolism. He discusses a few of the minor points he will use to populate the section on characters. He then asks the class to work in groups to populate key points for the section on theme, including specific page references. Students then select a book to read independently and are asked to produce an outline for an accompanying descriptive analysis.*

## Recommendation 1 (continued)

### **English language arts**, Freytag Pyramid/plot diagram strategy

*An English language arts teacher models using a Freytag pyramid to diagram the plot of a story she is writing. To structure her diagram, she follows a framework that includes an exposition or introduction, rising action, climax, falling action, and resolution or conclusion. She discusses how she might complete each section, using a book the class recently read together as an example. Students then select a book to read independently and are asked to produce a plot diagram to analyze the structure and story.*

### **Science**, Rank the evidence strategy

*A science teacher models using evidence and statistics to support a position paper on deforestation. He discusses how he identified sources for his research and then ranks the supporting evidence he collected to support his claim, designating the strongest and most convincing evidence. Students spend the week conducting research and collecting supporting evidence for their own position papers. Students then work with a partner to rank each other's evidence and discuss how to craft a strong argument for their position papers.*

### **Family consumer science**, Peer feedback strategy

*A family consumer science teacher models her thought process while writing a recipe for someone that has never cooked before. She considers what concepts her audience may be familiar with (mixing or combining ingredients) and what concepts may be unfamiliar (beating an egg). Students then write their own recipes and later trade recipes with a partner. The partner follows the instructions in the recipe and gives feedback to the student, who then revises his or her own recipe for clarity.*

## 3. Engage students in evaluating and reflecting upon their own and peers' writing and use of modeled strategies.

Reflection activities enable students to carry out the evaluation component of the writing process, and deepen their understanding of their writing effectiveness and how well they accomplished their goals and executed their strategy. Reflection also helps students discover ways to improve their writing, and reinforce the use of effective strategies in future tasks. (Recommendation 3 discusses formative assessment, a type of evaluation and reflection performed by teachers to improve their writing instruction.) The goal is the same: to support students in improving the quality of their writing.

After students practice using a particular strategy, have them ask themselves a series of questions to reflect upon their use of the strategy, or challenge students to articulate how the strategy worked for them (e.g., "How did the strategy help you achieve your writing goals?" or "What did you find challenging about

using that strategy?"). Encourage students to consider these reflections when approaching a component of the writing process in the future to help them internalize how strategies can facilitate effective writing.

Provide opportunities for students to evaluate their own and others' writing on a variety of features, such as whether the piece:

- achieves the author's intended goals for the assignment
- incorporates a logical problem-solution organization
- establishes mood, tone, and style (the writer's **voice**)
- has sufficient detail
- is well-organized for the intended audience
- uses strong and appropriate word choice

## Recommendation 1 *(continued)*

- incorporates dialogue as appropriate (e.g., when writing a fiction short story)
- presents evidence that is sufficient and necessary (e.g., when supporting a claim for a scientific argument)

As demonstrated in the last two points, the evaluation characteristics will vary based on the purpose and audience for the assignment.

Example 1.11 illustrates a classroom activity that facilitates reflection on student writing and use of a writing strategy.

Incorporate evaluation and reflection components into writing assignments of different types and in different disciplines. For instance, in Example 1.12, students are asked to write a literary analysis essay and use a color-coding strategy to evaluate that essay.

### EXAMPLE 1.11.

#### Model-Practice-Reflect using book club blogs<sup>46</sup>



*Create an online blog space for students to post written content about books they have read and comment on other students' blog posts. Students should follow a set of guidelines, established by the teacher and/or agreed upon by the class, when commenting on other students' blog posts (see below for sample guidelines).*

Model for students how to write a blog post that summarizes and analyzes a book of your choice. Distribute blog posts from past students for the class to read and evaluate. Additionally, model for students how to comment on another student's blog post, incorporating the commenting guidelines.

Students can practice writing blog posts throughout the year. As students become more proficient at writing summaries, the blog posts can take other forms (such as reflective writing or argumentative writing) or focus on other objectives (such as summarizing or evaluating the use of writing strategies). As students improve their blog posts and comments, highlight particularly effective posts and constructive blog comments each week. Periodically ask students to reflect upon how their writing changed throughout the course of the year based upon the peer and teacher comments they received.

#### Sample guidelines for commenting on blogs

*Comments will receive points according to how complete they are and how well these guidelines have been followed.*

1. Comment on what the writer wrote, not on the writer himself or herself.
2. Don't put the writer down, even in a joking way. Humor does not always come across effectively in blog comments.
3. Before submitting a comment, always consider whether you would find that comment constructive if it were left as a comment on your own work.
4. Be specific in your comments. Don't say, "Your post is really good." Instead, refer to something specific that you like about it.
5. Don't focus on the post's grammar and spelling. Focus on ideas and organization instead.
6. Use polite language and **academic vocabulary** in your comments. Follow the rules of grammar and spelling as much as possible.
7. Don't use your comments as an opportunity to show how much smarter you are than the writer of the blog.
8. Avoid the use of "ALL CAPS." It may lead to the reader misunderstanding your tone.

## Recommendation 1 (continued)

Have students analyze how their strategy use, writing knowledge, writing skills, and written products have improved. Students can keep a

portfolio of their work throughout the school year to facilitate this analysis. At different points during the year, encourage students

### EXAMPLE 1.12.

#### Using color-coding to evaluate student writing<sup>47</sup>



Use the following color-coding strategy to evaluate your own paper. Highlight, underline, or change the color of the text using the colors below to identify different text features. After color-coding, make a list of your reflections based on your color-coding and discuss any revisions you plan to make to your paper.

- **Orange:** plot summary (orienting the reader to the facts)
- **Green:** supporting detail (examples, evidence, quotes)
- **Blue:** commentary (deeper thinking, interpretations, conclusions, insights, opinions)

#### Sample color-coded paragraph

At the beginning of the story, we meet the seventeen-year-old Jimmy Baca working the graveyard shift in an emergency room, “mopping up pools of blood” amidst the “screams of mangled kids writhing on gurneys.” A high school dropout who is unable to read or write, he is ashamed of himself and humiliated by his inability to articulate his feelings. On the outside, he wears the “mask of humility,” but on the inside, he “seethes with mute rebellion.” The word “mute” here signifies how voiceless and powerless he feels. Further, the word “seethes” suggests that he is boiling with rage. Although he cannot read, he recognizes the word “Chicano” on a history book and he is motivated to steal it because the visual images of Chicanos speak to him and connect him to his culture. In essence, this empowers him and makes him proud.

When Baca steals the second book and teaches himself to read, a door begins to open for him. He begins to rediscover the inner child who had been trapped inside. The soothing words create a music and happiness inside him which comforts him and he feels “cured” as if from an illness. But it is the act of writing, of putting words on paper, that ultimately sets him free. As he comes into language and experiences its power, he is transformed. He writes, “But when at last I wrote my first words on the page, I felt an island rising beneath my feet like the back of a whale...I had a place to stand for the first time in my life.” The image of the island indicates that he is no longer at sea. He finally feels grounded. No longer does he feel like a helpless victim, battling to stay afloat. Writing is his lifeline. Instead, for the first time, Baca feels born anew, powerful, and free. He states, “I crawled out of the stanzas dripping with birth-blood, reborn, and freed from the chaos of my life.”

#### Sample color-coding reflections

- The piece begins with more plot summary and less commentary, but ends with more commentary and analysis as the writer elaborates on his interpretations.
- The use of quotes from the story helps tie the plot summary to the commentary.
- Additional plot summary may be necessary to explain Jimmy’s background, such as why he dropped out of school or how he taught himself to read.



## Recommendation 1 *(continued)*

to compare their most recent work to earlier pieces of their writing. For example, students can review work they wrote in the beginning of the school year, compare it to work they wrote in May, and answer reflection questions such as the following:<sup>48</sup>

- After rereading drafts of your own work, can you see any evidence of your growth as a reader and writer? Please describe what you notice about your performance.
- If you saw growth between your drafts, what do you think is responsible for your progress? Be as specific as you can in your answer.
- If you did not mention this above, to what degree did revising your first draft prepare you to write well on your final draft?

Students can go through a similar exercise when moving between a first draft and subsequent drafts for the same assignment. After students have implemented their revisions, ask them to explain the changes they made to reach their final draft and to articulate

how those changes helped make their writing more effective.

**Rubrics** are tools students can use to facilitate the evaluation of their work. Use rubrics to prompt students to identify ways in which their writing could be improved, and ask students to identify strengths in their writing and others' writing (see Example 1.13).

Teachers can find many sample rubrics online or through professional learning communities. They can also create rubrics themselves or in collaboration with other teachers. Teachers may consider consulting their state writing rubrics as well as **exemplar** papers when developing rubrics from scratch. Teach students how to use rubrics to assess how well they met certain criteria and to inform their plans for improving their writing.



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

**Obstacle 1.1.** *I teach my students specific writing strategies, but then they don't seem to use them while composing.*

**Panel's advice.** Teachers should explore why students are not using writing strategies and modify their instructional approach based on what they learn.

- If students have not internalized the strategies they are taught, re-teach the specific steps of the strategy. Consider posting lists of strategies and their steps in the classroom as a reminder, providing students with laminated copies of strategies they can keep at their desks, or encouraging students to create a mnemonic to remember particular strategies.
- If students are lacking confidence in their strategy use, provide opportunities for them to make choices about which strategies to use. This will help engage them in strategy use and empower them to select a strategy that works for them. Facilitate one-on-one opportunities for students to explain why they selected a particular strategy, reflect on their choice, and discuss how the strategy helped them.
- If students are using strategies only occasionally, look for opportunities to recognize students' progress toward using strategies more consistently. Teachers can support student writers by providing positive feedback when a student uses a strategy correctly, ensuring that each student has a voice during whole-class discussions, and finding ways to value something in every student's writing, including strategy selection and use.
- If students aren't visibly using strategies or using them rarely, but their writing has improved, they might be implementing strategies automatically in a way that is not visible to teachers. When students do this, celebrate the internalization of

a strategy becoming an automatic skill. Continue to monitor students' progress in using strategies and writing effectively. Students may no longer need to implement writing strategies if they are able to write effectively without them.

**Obstacle 1.2.** *For some of my students, strategy instruction doesn't seem to improve their writing achievement.*

**Panel's advice.** Consider why specific students are not benefitting from strategy instruction and think about ways to tailor strategy instruction based on their skill levels:

- For students who are struggling, strategies can be made simpler by streamlining steps or focusing on one step at a time. For example, with the PLAN and WRITE approaches described in Example 1.2a and 1.2c, respectively, simplify the strategy by eliminating steps or goals. Consider laminating sheets of paper that list strategies and their steps so students can have a quick reference guide at their desks.
- For more advanced students, make strategies more complex by adding more steps or developing more challenging goals.

**Obstacle 1.3.** *I struggle to be a strong writer—how can I teach my students to be effective writers?*

**Panel's advice.** There are many ways to strengthen your own writing and, consequently, your writing instruction:

- Write the assignments that you are asking your students to complete. This can help you become more confident by engaging yourself in writing more frequently. It may also help you understand what is challenging for students, clarify the assignment's instructions, and identify the strategies that you used to complete

## Recommendation 1 (continued)

the writing task. This will help you plan for strategy instruction.

- Simplify writing by thinking of it as the sum of many components. Recognize that writing can be broken into manageable steps.
- Understand that writing is not always a complex report or long essay. Shorter writing assignments can offer valuable learning opportunities to students as well.
- Join or develop a supportive group with other teachers where you share your challenges and successes with your writing and writing instruction. Group members can provide feedback and support to one another.
- Share your writing with your students, including your challenges. Students may experience similar challenges and find it useful to listen to you model your thought processes and solutions.
- Continue to expand your writing instruction knowledge and skills by participating in professional-development activities, observing other teachers during writing instruction, and/or developing and obtaining feedback on a plan for teaching writing in your class.

**Obstacle. 1.4.** *I model the use of rubrics for my students, but my students' self-assessments aren't accurate.*

**Panel's advice.** Students may not understand key text features well enough to make accurate judgments about their own writing. Generally, students who achieve higher-rated compositions tend to have more awareness of the strengths and weaknesses of their writing, whereas students whose compositions score lower tend to have less awareness.<sup>50</sup> Consider the following approaches for improving students' self-assessments:

- Model the use of rubrics by taking two pieces of student writing from a previous year, one an exemplar of effective writing

and one an exemplar of ineffective writing, and annotate each piece using a rubric. If the rubric measures several aspects, consider limiting the modeling to one attribute at a time to help make the rubric criteria more concrete. Students can then annotate each other's writing in pairs.

- The rubric criteria may change, depending on the discipline or purpose for writing. Ensure that students recognize these changes and complete their self-assessments with these differences in mind. Discuss as a class how aspects of the rubric are specific to the discipline, audience, or purpose.
- Have students complete a rubric prior to submitting a writing assignment. During their review of the assignment, teachers can complete the same rubric side-by-side with the student's. Teachers can meet with students individually to discuss any discrepancies in the evaluations. Students can also review both rubrics, summarize the differences, and plan for how they might revise the assignment based on both evaluations.
- After a specific writing assignment, ask each student to rate his or her confidence that the composition will receive a high mark for one facet of the composition (e.g., character development). Then, pair students and ask them to evaluate each other's compositions for the presence of character development. After the evaluation, have each student again rate his or her confidence that the composition will receive a high mark. The focus on a particular feature, the peer evaluation, and the final rating of confidence requires students to think about how well they accomplished the specific feature and to be more aware of the features present in their writing.
- Assess the degree to which students have confidence in their own self-assessments by asking them to rate their confidence in their rubric evaluations. For instance, a teacher can ask students to write by each section of

## Recommendation 1 *(continued)*

the rubric a 1, 2, 3, or 4, with 1 being “I’m not confident at all in what I’m saying here,” and 4 being “I’m totally confident in this judgment.” Students who make inaccurate self-assessments and rate their confidence high may need a better understanding of what the rubrics are focused on. Students who make inaccurate self-assessments and rate their confidence low may need a better understanding of how to address the rubrics in their own writing.

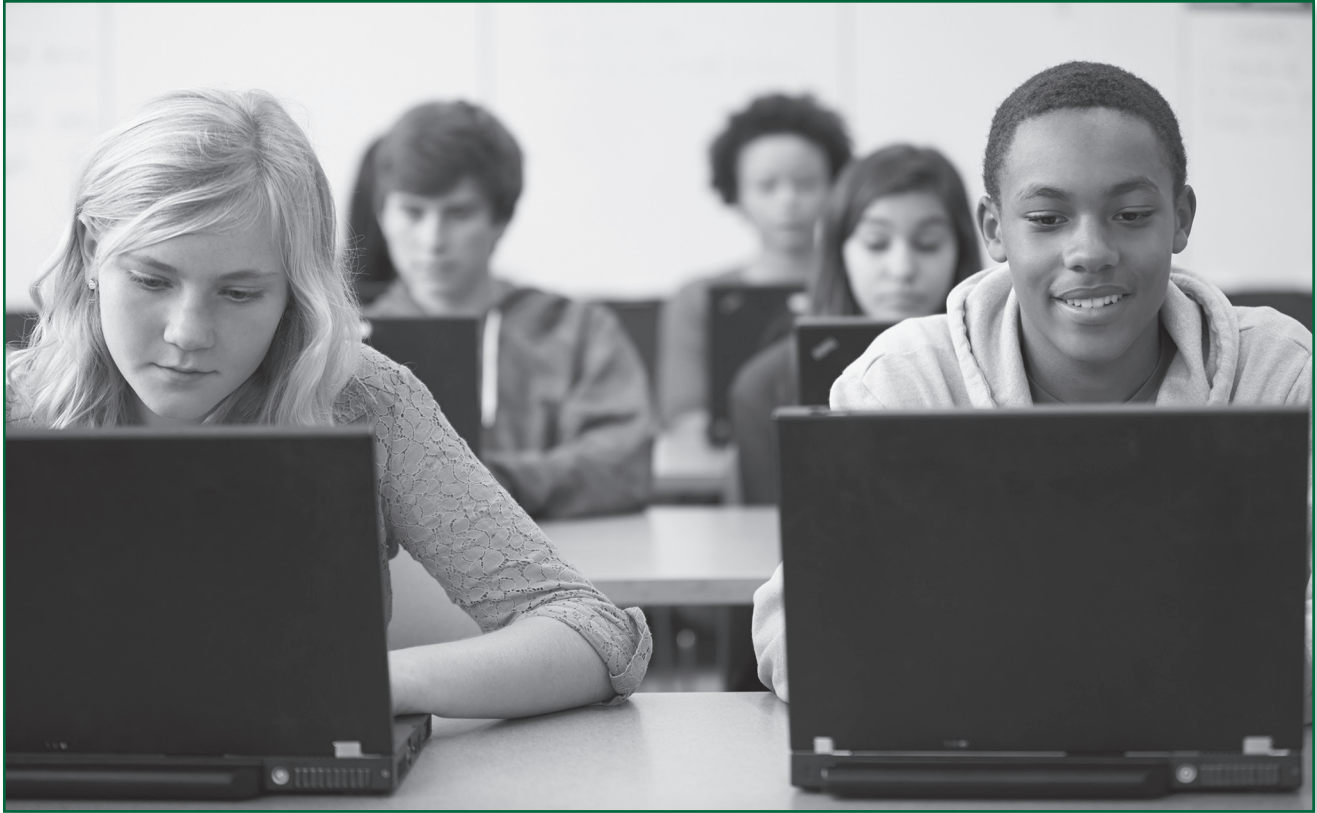
**Obstacle 1.5.** *How can I help my students to feel comfortable reflecting on their own work?*

**Panel’s advice.** It will take time for novice writers to understand what qualifies as effective writing, build their writing skills, and strengthen their confidence to reflect upon and improve their own work. Gradually transitioning responsibility to students helps them build their skills and confidence steadily.

Teachers might have to demonstrate the reflection process multiple times to illustrate that reflection and self-criticism are helpful tools to improving one’s writing. Reflection is a cyclical process and should occur throughout the writing process. Students should be given multiple opportunities to reflect on the same piece of writing.

Teachers can also focus on creating a supportive and safe classroom environment for students to self-critique their work. For instance, after a student voices a self-critique in front of other students, a teacher might say the following so everyone can hear, “You showed good awareness there when you criticized your own work, Juan. It’s hard, but that’s how good writers get to be good writers. I’m proud of you for doing that.” By commenting positively and publicly when students self-critique their writing, teachers can help students build confidence in their reflection skills.

## Recommendation 2



### **Integrate writing and reading to emphasize key writing features.**

*Combining reading and writing together in an activity or assignment helps students learn about important text features. For example, asking students to summarize a text they just read signals that well-written texts have a set of main*

*points, that students should understand main points while they read, and that when students write certain types of compositions they should focus on main points. Reading exemplar texts familiarizes students with important features of writing, which they can then emulate.*

**Exemplar texts** are examples that clearly illustrate specific features of effective writing for students.

Similarly, writing with a reader in mind and reading with the writer in mind strengthens both skills.<sup>51</sup> Writers are more effective when they tailor their writing to the reader and anticipate the impact on their audience as they write.<sup>52</sup>

Because reading and writing share four types of cognitive processes and knowledge (see Figure 2.1), integrating reading and writing can also help students develop:<sup>53</sup>

1. *Meta-knowledge*, which involves understanding the reading and writing processes in relation to goals and purposes. For example, when reading or writing an editorial, a student understands which reading and writing strategies align with this format.
2. *Domain knowledge*, which is about the substance and content that is revealed from reading and writing.



## Recommendation 2 (continued)

3. Important *text features*, which include text format, organization, and genre, as well as spelling and **syntactical combinations** that are accepted in a particular language or culture.
4. *Procedural knowledge*, which includes integrating complex processes to write compositions and using strategies for accessing information when reading text.

Combining writing and reading together in all disciplines enables students to develop their writing in diverse contexts. By practicing their writing skills across the curriculum, students have more opportunities to practice different types of writing. For example, in science class, students can write informational text about their lab experiments; in history class, students can write argumentative pieces about different historical perspectives. Moreover, the panel believes that the benefits of writing across the disciplines extend beyond the writing itself—writing can improve reading comprehension, critical thinking, and disciplinary content knowledge.<sup>54</sup>

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

Eight studies contributed to the level of evidence for this recommendation.<sup>55</sup> Three studies meet WWC group design standards without reservations,<sup>56</sup> and five studies meet WWC group design standards with reservations (see Appendix D).<sup>57</sup> Seven studies found positive effects

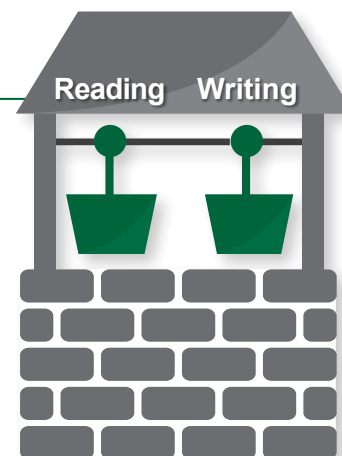
on at least one writing outcome,<sup>58</sup> positive effects were found in the overall writing quality, genre elements, and word choice domains. The evidence was largely aligned with both steps of the recommendation, with six studies examining practices related to using exemplar texts (step 1) and teaching students to understand that writers and readers use similar strategies, knowledge, and skills (step 2).<sup>59</sup> Three studies with positive effects provided a direct test of the recommendation, examining the recommended practices without other important intervention components.<sup>60</sup> The other four studies that found positive effects examined interventions that included other recommended practices, but the panel determined that integrated reading and writing instruction was a critical component of the study interventions.<sup>61</sup> All of the studies were conducted in the United States except one, which was conducted in Germany.<sup>62</sup> The student samples were diverse, including general-education students and English learners from 6th to 12th grade.

While the supporting evidence for this recommendation had high internal and external validity, and there was a preponderance of positive effects on writing outcomes, this recommendation has a moderate level of evidence. One study found indeterminate effects on writing outcomes<sup>63</sup>, and fewer than half of the studies provided a direct test of the recommendation. Two of the three studies that provided a direct test of the recommendation had a very short duration.<sup>64</sup>

### Figure 2.1. Shared knowledge for writing and reading

(Fitzgerald and Shanahan, 2000).

*“The shared knowledge model conceptualizes **reading** and **writing** as two buckets drawing water from a common well or two buildings built on a common foundation.”*



### How to carry out the recommendation

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#### 1. Teach students to understand that both writers and readers use similar strategies, knowledge, and skills to create meaning.

Students spend more time reading than writing, so they are more familiar with the skills required to read. Showing them the connection between reading and writing can help them transfer their reading skills to writing and vice versa.

Explicitly identify the connections between reading and writing for students. For example, to help students recognize a cause/effect structure when reading and use the structure when writing, ask them to read a science text with this structure. Support students as they identify key features of the cause/effect structure—for example, the use of signal words such as *because*, *cause*, *effect*, *if*, and *then*. Tell students, “So now you know some signal words authors use when they want their readers to understand causes and effects. Now you can use that knowledge when you are writing about a topic that includes cause-and-effect relationships.” Explicitly stating the connection between what students just learned from reading and how they can apply it in their own writing elevates their knowledge about the connection between reading and writing.

Help students understand that just as readers use strategies to decipher text and meaning, writers use strategies to infuse their text with meaning. For example, when reading a narrative, encourage students to visualize the setting by creating mental pictures based on the author’s use of sensory details. In the same way, when creating their own narratives, students can describe sights, smells, sounds, tastes, touches, and movements to paint a picture in their own words.

Show students how writers create meaning for readers by providing annotations on the margins of exemplar texts. The annotations can highlight the ways writers engage readers by setting up the context and focus of the text; using concrete words and sensory language to create pictures of characters, events, and experiences; and providing a conclusion that resolves conflicts or problems.

Ask students to respond to something they have read using **cognitive-strategy sentence starters**. These tools help students structure their thinking and writing, and focus on key features. Cognitive-strategy sentence starters help students write by modeling:

- what writers might say to themselves inside their heads when composing,
- what readers think when annotating texts they are reading, and
- how writers generate ideas for texts they are writing.

For example, have students read the first paragraph of an essay and complete the phrase “At first, I thought . . . , but now, I think . . .” in writing (see Example 2.1). Ask students to continue using sentence starters to write responses to each paragraph in the essay. As students move through the paragraphs, they should also note the author’s logical sequence in the essay. When students have completed writing using sentence starters, model and discuss how the author may have used similar strategies to develop the essay. For example, the teacher may say, “What do you think the author was aiming for in the first paragraph?”

### EXAMPLE 2.1.

#### Using cognitive-strategy sentence starters to generate or respond to texts<sup>65</sup>

##### Strategy to Practice and Sentence Starter

###### Revising Meanings

- At first, I thought . . . , but now, I think . . .
- My latest thought about this is . . .
- I'm getting a different picture here because . . .

###### Reflecting and Relating

- The big idea is . . .
- A conclusion I'm drawing is . . .
- The most important message is . . .

###### Evaluating

- This could be more effective if . . .

###### Analyzing author's craft

- A strong or impactful sentence for me is . . .
- This word/phrase stands out for me because . . .
- I like how the author uses \_\_\_ to show . . .

How did the author's vivid language in the first paragraph achieve that goal?" Similar discussions can occur when presenting exemplar texts to students.

Use specific activities that integrate writing and reading to enhance student skills and knowledge in reading and writing across disciplines.

- Activities that use key words and phrases from a story (story impressions) help students develop knowledge of text features that writers use in drafting specific narrative genres. The activity in Example 2.2 asks students to create a narrative using a selection of words from a story, helping them anticipate what they might read in that story.
- When reading multiple texts on the same topic, students can learn to evaluate and synthesize information into a cohesive summary. Teachers can also have students work together to synthesize texts on the same topic, then strengthen their learning

by writing their syntheses individually (see Example 2.3).

- A similar activity could be used to help students develop extended research arguments that incorporate opposing perspectives. Students can read diverse viewpoints, write a persuasive essay, review and evaluate a peer's writing, and revise their own writing (see Example 2.4).

## 2. Use a variety of written exemplars to highlight the key features of texts.

Use exemplars to teach students the key features of effective writing so they can use them in their own writing. Exemplar texts, whether published or created by teachers or peers, can clearly illustrate specific features of effective writing. These features include strong ideation; organization and structure; word choice, grammar, punctuation, and spelling; use of literary devices; sentences meeting the writers' intentions; voice,

### EXAMPLE 2.2.

#### Story impressions for English language arts<sup>66</sup>

##### Instructions

1. Select “story impression” words and phrases from “The Tell-Tale Heart” by Edgar Allen Poe that suggest a murder scenario. Story impressions are key words and phrases that drive a narrative. They may include names, places, strong verbs, events, or other words that give clues to what the poem is about.
2. Present the words to students in the exact order in which they appear in the text.
3. Direct students to write a narrative of the story using the story impressions.
4. Have students read the story and compare their writing to the actual content of the story.

##### Story impressions presented to students

house → old man → young man → hatred → ugly eye → death → tub → blood → knife → buried → floor → police → heartbeat → guilt → crazy → confession

##### A remedial 8th-grade student’s story based on the story impressions

There was a **young man** and his father, an **old man**. They lived in a **house** on a hill. The old man **hated** his son because he had an **ugly eye**.

The young man was asleep in his bedroom when he was awakened by screaming. He went to the bedroom and saw his father lying in the **tub**. There was **blood** everywhere and a **knife** through him.

The young man found a tape recording hidden behind the door on the **floor**. He turned it on, and there was screaming on the tape. The young man started to call the **police**, but then he stopped and remembered what his mother had told him. She had told him that he had a split personality, and he felt less **guilt**. So he called the police and **confessed** to being **crazy** and killing his father. His **heartbeat** was loud as he called.

### EXAMPLE 2.3.

#### A writing and reading activity for synthesizing multiple texts



A social studies teacher provides students with two texts on European immigration in the 20th century, one from a blogger and the other from the BBC. Students read both pieces and work in pairs to make a list of the following:

- the argumentative claims and use of evidence
- the similarities and differences in tone and structure in the two pieces

After discussing their lists as a class, students research the claims made in each piece to evaluate the validity of the evidence presented. Then, each student uses the lists to make a descriptive summary of the two articles and the validity of their evidence.

## EXAMPLE 2.4.

### A writing and reading activity for synthesizing multiple perspectives

#### Steps

1. After students have identified their own view, have students read relevant articles to identify evidence from a concurring view point and an opposing view point.
2. Ask students to write up the opposing view point and to be mindful of being fair.
3. Have students share their drafts with one or two peers who respond in writing using a structured response form (a worksheet created by the teacher to guide peer feedback on specific aspects of writing, see below).
4. Ask students to choose whether or not to revise their papers based on the comments.
5. Review student responses and decide whether additional instruction on writing about opposing perspectives is necessary.

#### Sample prompts from a structured response form

- What parts of the writing help you know that it's a narrative? How can you tell that the writing is telling a story?
- What details does the writing include?
- What is good about the writing? What should not be changed? Why is it good?
- As a reader, what do you not understand?
- What specific suggestions for improvement can you make?

including tone, mood, and style; and correct use of conventions. Example 2.5 lists some text types and their important features.

As students read an exemplar text, emphasize the features that align with the specific learning objective being taught (e.g., using supporting evidence to support a claim in argumentative

writing). Color-coding (as illustrated in Example 1.12) is one way to emphasize text features. For example, provide an exemplar of argumentative writing with each *claim* highlighted in yellow, define *claim*, and then discuss each claim as the class reads the exemplar. Similarly, when using an exemplar of narrative writing to emphasize theme, discuss as a class the definition of

## EXAMPLE 2.5.

### Key features of exemplars for different text types

#### Types of Texts and Features

##### Argumentative

- A proposition (the major premise of the argument)
- Claims on which the proposition is built
- Supporting evidence (facts and/or opinion)
- Well supported generalization (not fallacious reasoning)
- Incorporation of anticipated objections
- Strong closure

##### Descriptive

- Description of the person, place, object, or event
- Use of descriptive and figurative language to help readers visualize the person, place, object, or event
- Qualities or characteristics may be listed or arranged in a particular order
- Concrete details (sight, taste, touch, smell, sound, and movement) to bring the subject to life

##### Narrative

- A setting
- An introduction of characters
- A problem or goal

## Recommendation 2 (continued)

- An attempt to solve the problem—often multiple unsuccessful attempts or embedded episodes of attempts within attempts
- A solution to the problem
- A resolution, conclusion, and/or moral

### Informational

- A topic or theme (may be repeated)
- Present tense to evoke a timeless or generalizing quality
- Technical vocabulary
- Descriptive attributes and characteristic events
- Definitions or explanations of terms
- Visual elements such as diagrams, tables, and charts

### Technical

- Specialized topic
- Instructions about how to do something

### Persuasive

- Main point or argument
- Motivation and arguments for key points (including need, significance, and benefits)
- Supporting evidence

### Reflective

- A concrete occasion or anecdote in the beginning
- Reflection of the universal significance of the occasion or anecdote
- A process of discovery
- A lesson about human nature in the conclusion
- Rich concrete details and sensory description

### Expressive

- First person with informal language (i.e., contractions, slang)
- Often has dialogue
- Chronological organization
- Lots of description with extensive use of adjectives
- Feelings are described in detail
- Active verbs

*theme* and have students highlight evidence of the theme in blue while reading the exemplar aloud. Once students understand the features, ask them to practice emulating these features in their own writing (see Examples 2.6 and 2.7).

Include exemplars with diverse writing quality so that students can distinguish the features of good exemplars from average and poor exemplars across text types. Help students notice what distinguishes a high-quality example from a less proficient one (see Example 2.7). Students can annotate the examples and then create a class list of features to refer to as they are reviewing their own drafts.

Emphasize that key features of text types may vary or may be more or less prominent based on the purpose, audience, and **form** of the writing (see Example 2.8). Have students brainstorm how the same topic could be written about in different types of texts. Share

different forms of writing—news articles, research briefs, research papers, testimonials, and fictionalized accounts—about a specific topic, such as Hurricane Katrina, to illustrate how the same content is treated differently to better suit the audience or purpose. Strategies like RAFT may help facilitate compare/contrast activities, as RAFT prompts students to think about the writer’s **R**ole, the **A**udience, the **F**ormat of the writing, and the **T**opic of the writing.<sup>67</sup>

Have students read an exemplar of a specific text type, and ask them to emulate different features of that text (tone, style, etc.) as they write. In Example 2.9, the student is given the prologue to *Romeo and Juliet* and is asked to mimic the style of the original prologue on a topic of his or her choice, a “Copy/Change” activity. This activity gives students practice in evaluating the key features of texts and incorporating them into their own writing.



### EXAMPLE 2.6.

#### Using editorials as peer and professional exemplars of persuasive texts

To help students study general features of persuasive texts, use editorials such as the Op-Ed section of the *New York Times*' "Room for Debate," which features multiple points of view on a current issue. Guide students in considering specific features of published editorials and why they are helpful (e.g., writer biography, submission policies, headline, length, newspaper audience, and how sources are cited). Specifically, have students read the editorials multiple times to understand what makes them effective. During the first reading, students should identify key words (words that signal the goal or purpose of the editorial); during the second reading, they should identify key claims and statements that connect evidence to the claim; and in the third reading, they should identify the line of reasoning.

Finally, have students plan for and write their own editorials. Students can share their editorials with peers for review and to discuss the following:

- whether important features are present in their own and peers' writing, and
- how an editorial might change when writing for a general audience versus an audience familiar with the subject.

### EXAMPLE 2.7.

#### Teaching features distinguishing strong and weak student exemplars

*In this example, a teacher provides students with the first paragraph of a strong exemplar text and a weak one, both for an interpretive essay in response to the same prompt.*

*Write an interpretive essay about "The Horned Toad" by Gerald Haslam.*

##### **Student exemplar 1 (strong)**

There are people in life that may make us irritated, upset, or sad, yet we can learn to love them. "The Horned Toad," by Gerald Haslam, is an autobiographical narrative that reflects Haslam's experience as a child when his grandmother came to visit his family. Through his changing relationship with his grandmother, Haslam illustrates how people can learn to love and accept something or someone that appears unpleasant at first. He teaches us not to trust our first impression of other people and to look deeper to discover what we have in common with them.

##### **Student exemplar 2 (weak)**

In the beginning of the story, Gerry disliked his grandmother. She disapproved of everything he did and called him a brat. He would try to avoid her every day after school. She offered him candy and then told him to get his own. She was always mean to him and never gave her approval. Gerald disliked her because she was too stuck in her ways. Which he didn't understand, but toward the middle of the story when she gives him money to go buy candy, he starts to connect with his grandmother.

*The teacher then discusses how key features differ. For example, in the strong exemplar, the introductory paragraph begins with a hook (the first sentence or two that grabs the reader's attention), followed by an identification of the title, author, and genre (TAG). After providing some context about the story, the writer presents a thesis or claim about what the writer believes the author's central message is. These features make the paragraph effective. In the weak exemplar, the writer begins by summarizing the story and continues retelling what happened, rather than presenting a thesis. The writer also calls the author "Gerry," rather than using formal academic English and identifying the author by his last name.*

### EXAMPLE 2.8.

#### Demonstrating that key features of exemplars vary by form, purpose, and audience

**Form:** News Article

**Purpose:** To inform readers about an event

**Audience:** Adult general public

**Key features emphasized:** Supporting details about the event and its impact on the community; quotes from eyewitnesses

**Form:** Research brief

**Purpose:** To inform readers about the research behind an idea, event, or concept

**Audience:** Practitioners who need the information for background or for research purposes (e.g., meteorologists), or who need to convey or translate the information to another audience such as the general public

**Key features emphasized:** More extensive points and more supporting detail than a news article

**Form:** Research paper

**Purpose:** Same as a research brief, but using more extensive research evidence to inform readers

**Audience:** Other researchers

**Key features emphasized:** Extensive points and supporting detail; might aim to use facts, statistics, and research to explain human interest stories and/or technical causes of the event

**Form:** Fiction/literary non-fiction

**Purpose:** To create interest in a person or people

**Audience:** Readers who like human interest stories (the general public)

**Key features emphasized:** Compelling lead-in sentence; from different sources; details that appeal to the reader's emotions

**Form:** Blog post

**Purpose:** To convey an opinion

**Audience:** General public

**Key features emphasized:** Message tailored to the blog's target audience; a compelling introduction; concise language to deliver key points



Use rubrics and checklists to highlight key features of effective writing, and have students use them to evaluate their success in emulating important text features. Providing students with these explicit lists of expectations can help clarify the aspects students should emulate. Teachers can also provide the raw materials to create a rubric and allow students to distill the exemplary aspects of a text for themselves. Example 2.10 provides a sample student rubric created using strong and weak exemplar texts (see Example 2.7).

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

**Obstacle 2.1.** *Teaching writing and reading aren't central to my discipline. I have too much content to teach already, and I don't have time to develop students' writing skills as well.*

**Panel's advice.** The panel is not recommending that disciplinary teachers specifically teach writing and reading, but that teachers incorporate writing and reading to further students' learning of each skill. Many minor writing and

### EXAMPLE 2.9.

#### A Copy/Change activity to help students emulate specific features<sup>68</sup>

Write a poem on the topic of your choice, mimicking the style from William Shakespeare's *Romeo and Juliet*. Use style features similar to those in the original prologue: short phrases, 10 syllables in each line, 2 or 4 phrases that combine into a single sentence, and phrases that repeat in parallel form.

#### Original Prologue

Two households, both alike in dignity,  
In fair Verona, where we lay our scene,  
From ancient grudge break to new mutiny,  
Where civil blood makes civil hands  
unclean.  
From forth the fatal loins of these two foes  
A pair of star-cross'd lovers take their life;  
Whose misadventur'd piteous overthrows  
Do with their death bury their parents'  
strife.  
The fearful passage of their death-mark'd  
love,  
And the continuance of their parents' rage,  
Which, but their children's end, nought  
could remove,  
Is now the two hours' traffick of our stage;  
The which if you with patient ears attend,  
What here shall miss, our toil shall strive  
to mend.

—from *The Complete Works of William Shakespeare*, edited by W. J. Craig, Oxford University Press, London, 1924

#### Student Example

Two schools, both alike in many ways,  
In fair Bay City, where we lay our tale,  
From rival grudge break to new extreme  
heights,  
Where old grudges make new ones to  
begin.  
From forth the enemies of these two  
schools,  
A pair of football players take their time;  
Whose kickoff stunk piteous and stunk  
again  
Do with their game what their coaches like.  
The brand new passage of their brand new  
tricks,  
And the continuance of their linebacker,  
Which, but their brand new shoes naught  
could help kick,  
Is now the two very fun-filled hours of our  
stage;  
The which if you decide to attend,  
What here shall miss, we never shall strive  
to mend.

—Tara, student, Bay City Public Schools

reading activities and tasks can help focus students' learning, but they don't require specific lessons on *how* to write or read.

Teachers in other disciplines can combine writing with reading to accomplish specific goals such as learning, remembering, and critical thinking. For example, teachers can encourage students to use writing to reflect

on what they have read or learned. Students can keep a math or science journal to extend and reflect on their learning or respond to prompts such as "A discovery I made about the cell structure today is . . ." or "Another strategy I could have used to solve this problem is . . ." Asking students to read text (whether it be a newspaper article, passage on the internet, or textbook selection) and

### EXAMPLE 2.10.

#### A sample student-created rubric from strong and weak exemplar texts

An exemplary interpretive essay will include most or all of the following:

- An effective opening hook that draws the reader into the essay
- Enough context for the writer to present his or her interpretation
- A clear thesis presenting the writer's interpretation of the author's central message
- Clear essay structure, including an introduction, main body, and conclusion
- Plenty of evidence from the text to support the writer's key ideas
- Commentary and/or analysis of the significance of the evidence
- Transitional words to establish coherence and link ideas together
- Academic vocabulary
- A formal tone and use of academic English
- Varied sentences to enhance the style and flow of the writing
- Few, if any, errors in the rules of written English

write about the key points will help students to learn and remember the major points of the text better.

Math teachers who are looking to incorporate reading and writing into their classes can have students use the logical reasoning inherent in writing to improve and verify their mathematical reasoning. One activity could include students writing an explanation of their problem-solving logic for an algebraic word problem. This allows them to check the soundness of their mathematical reasoning while writing.<sup>69</sup>

Collaborating with colleagues in professional learning communities or grade-level meetings can help. For example, collect everything that a specific student was asked to write in a day the week before the meeting. Define writing broadly (e.g., answers to text book chapter questions, notes during a lecture or on a reading, explanation of thinking for a math problem, a science lab write up, a literary essay, etc.). Work with your colleagues during the meeting to identify whether and how each writing assignment 1) supported the student in

learning the content and 2) consider how you might revise or extend the student's content learning.

**Obstacle 2.2.** *My school teaches reading (or literature) and writing separately. How can I integrate reading and writing?*

**Panel's advice.** In classes that teach writing, use exemplar texts to integrate reading into the class. For example, have students read and analyze good exemplars of the writing style being taught before beginning to write (see Example 2.6). Then, as students draft their own pieces, encourage them to emulate one or two features of the exemplar in their own piece (e.g., the structure of an op-ed article in which the call to action comes at the end of the piece, vivid language to set the tone in a short story, how tables and text work together in a scientific article).

In classes that teach reading or literature, consider including short reflective or expressive writing assignments to enhance textual understanding. Students can write a short reflective journal entry after each chapter in a book, documenting their overall reactions

## Recommendation 2 *(continued)*

and responding to cognitive prompts (see Example 2.1). In literature classes, students may work on developing analytic essays by identifying the theme of the piece and selecting textual evidence and examples of how the author uses literary devices to support those themes. This could enhance the students' understanding of the literature.

**Obstacle 2.3.** *My students have trouble understanding the content of their reading, let alone writing about it.*

**Panel's advice.** Most teachers have students in their classes who are struggling readers and writers, and many teachers work with English learners who can also have difficulty understanding reading on-grade-level texts. Consider setting different reading and writing goals for different students, asking for more from some students and not as much from others. For example, if the class is tasked with writing about five major points in an essay, perhaps struggling students could be asked to write about one or two major points. Gradually, teachers can challenge struggling students with more reading and writing as they make progress.

When students write about what they are reading, it helps develop not only their understanding of what they read but also their reading skills.<sup>70</sup> Students do not have to write about all aspects of the text. Writing activities will help students better understand aspects of the text's content. For instance, to help students comprehend a text on biotechnology,

ask them to write the main idea and one supporting detail from the text. This exercise will help them to better understand an important aspect of their reading.



## Recommendation 3

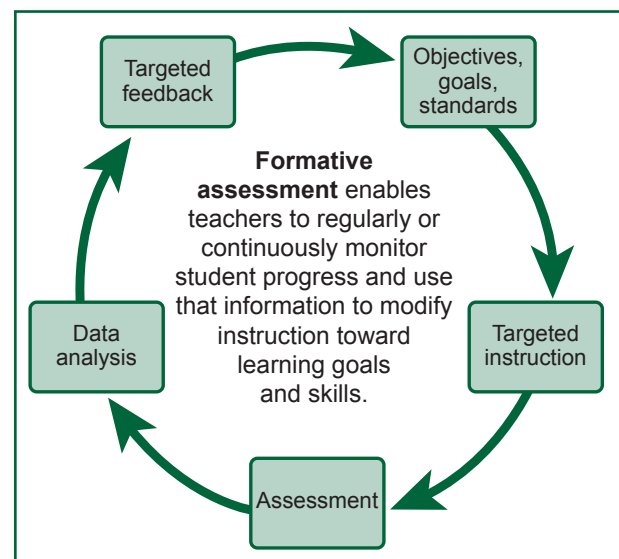


### Use assessments of student writing to inform instruction and feedback.

*Monitoring student progress throughout the writing process provides useful information for planning instruction and providing timely feedback to students. By regularly assessing student performance—not just students’ final written products—teachers learn about student progress on key learning objectives and can tailor their writing instruction accordingly. Struggling students and students with disabilities can benefit from additional and differentiated instruction on skills that have been taught, while students who have already mastered a skill can advance to a new one.*

The **formative assessment** cycle is an iterative process in which teachers repeatedly assess students’ skills and adapt instruction accordingly until the targeted learning goals are achieved (see Figure 3.1).<sup>71</sup> The process begins with the teacher identifying the

**Figure 3.1. The formative assessment cycle**



learning objectives, goals, or standards on which to focus. Next, instruction is targeted to achieve these goals. To measure student learning on the targeted goals, the teacher



## Recommendation 3 (continued)

administers assessments and analyzes the data. Finally, the teacher responds to the data by targeting instruction and feedback to focus on areas in which students need additional practice and exposure. Then the cycle repeats again.<sup>72</sup> Because the first step is often based on state or district standards and the second

step commonly follows a district or school approach, this recommendation focuses on the last three steps: assessment, data analysis, and responding to the data by targeting feedback.

Formative assessment tools, such as **exit slips** and **error analysis**, allow teachers to regularly monitor student progress. Exit slips are individual assessments with a few multiple-choice or short response questions that are administered at the end of a period. After administering the exit slips, teachers score and record the data to evaluate whether students learned the material during the period. For example, if a middle school English class learned about figurative language, an exit slip could ask students to write examples of a metaphor and a simile. Error analysis involves reviewing student assignments for specific aspects of writing (e.g., a lack of transitions between paragraphs that lead the reader logically between ideas) and tracking which students have included those aspects in their writing. Teachers can use error analysis to identify trends and common problems in student writing over time. In addition, error analysis allows teachers to monitor student progress and growth by tracking the same writing aspects over time.

**Exit slips** and **error analysis**, are formative assessment tools that allow teachers to regularly monitor student progress.

### Summary of evidence: Minimal Evidence

Four studies contributed to the level of evidence for this recommendation. One study meets WWC group design standards without reservations,<sup>73</sup> and three studies meet WWC group design standards with reservations (see Appendix D).<sup>74</sup> All four studies examined professional-development interventions that provided tools for teachers to use formative assessments in the classroom, and all studies found positive effects on at least one writing outcome. The studies examined interventions including components from all of the steps in Recommendation 3, but none of the studies provided a direct test of the recommendation because the interventions also included important components that were not part of this recommendation. Three studies examined the same intervention, the *Pathway Project*, which also included components of Recommendations 1 and 2.<sup>75</sup> These three studies found positive effects on outcomes in the overall writing quality domain. They were conducted in school districts in Southern California and included primarily mainstreamed English learners. The fourth study examined another professional-development intervention that included tools for teachers to use formative assessments, as well as other curricular materials for writing instruction and support for collaboration among teachers.<sup>76</sup> This study found positive effects on outcomes in the audience, organization, and use of evidence domains. It was conducted in 44 school districts across the United States.

This recommendation received a minimal level of evidence because three of the four studies examined a single intervention, and none of the studies provided a direct test of the recommendation. The evidence had strong internal validity—aside from the multi-component interventions—but three of the studies may have limited generalizability because they were conducted in a single region and included primarily English learners.

### How to carry out the recommendation

#### 1. Assess students' strengths and areas for improvement before teaching a new strategy or skill.

Use regular assessment to identify strengths and areas for improvement. Assessments can indicate whether students have the appropriate foundation for subsequent lessons and highlight common areas of student need, allowing them to be remedied more quickly. Assess students in both English language arts and other disciplines using regular classroom work, longer written assignments, or **on-demand writing prompts** (short writing assignments designed to assess student skills or understanding).

To determine student strengths and needs, before beginning a new lesson ask students to write in response to on-demand prompts. The design of the on-demand prompt plays an important role in shaping the quality of student writing.<sup>77</sup> When developing on-demand writing tasks identify the *purpose* and the *audience*, and provide age-appropriate tasks that are *accessible* and offer some choice.<sup>78</sup> Keep the task *authentic* by using real-world credible topics and have students perform real-world tasks that demonstrate meaningful application of their knowledge and skills.<sup>79</sup> In addition, consider the following questions when developing prompts:

- Does the prompt content and writing product have a clear and coherent purpose and focus? Allow for diverse responses? Require students to respond to texts, if relevant?
- Does the prompt build students' content knowledge, enduring understandings, and complex, higher order thinking skills?
- If using a text with the prompt, is the text engaging, authentic, accessible, and tightly relevant to the prompt? Does it require students to apply standards-based reading skills?
- Does the prompt engage students in applying writing skills to produce writing in a genre that is appropriately

challenging, central to the discipline, and appropriate for the content?

Example 3.1 presents some sample prompts for different subjects.

Review responses to the on-demand prompts to assess students' learning on specific skills, such as grammar, sentence structure, word choice, or use of evidence. Example 3.2 demonstrates how teachers can use an on-demand prompt and **graphic organizer** to determine specific instructional next steps for teaching literary analysis.

In addition to or in place of on-demand prompts, use student writing generated as part of regular classroom work, longer assignments, or writing from other disciplines to assess students. Review a first draft of the assignment and use error analysis to identify areas for the next instructional activity. After a lesson that focuses on the relevant skill in which students need more practice, assign a subsequent draft, and look for evidence that students have improved that specific writing technique or skill in their writing. Example 3.3 provides samples of how regular classroom writing tasks can be used routinely to assess and shape instruction for specific writing skills. In each of the samples, assessment of writing in a particular genre is embedded into a larger instructional sequence.

Teacher teams can collaborate and use the same prompts or assignments across grades or disciplines to assess overall strengths and areas of improvement. By sharing assessment data on students, teachers gain a stronger sense of student ability and minimize the number of assessments needed in a single discipline or grade. Examples 3.4 and 3.5 illustrate ways teacher teams can collaborate to administer formative assessments and use the data for their own instruction as well as during year-to-year planning.

### EXAMPLE 3.1.

#### Sample on-demand prompts for different disciplines

**Subject:** Social studies

**Prompt:** After 1945, the Cold War shaped events in Europe. (a) Describe two ways in which Cold War tensions affected Europe. (b) Describe two effects of the end of the Cold War.

**Subject:** Philosophy

**Prompt:** The class will be discussing which kind of person demonstrates more admirable qualities—Person A, Person B, or Person C. Write an explanation that you will present to the class about which person possesses more admirable qualities. Use information from the passage in your explanation.<sup>80</sup>

**Subject:** English language arts

**Prompt:** A school district has a new middle school. On the first day, the students realize that they are the first people to sit in the desks, use the books in the library, walk the halls, and set the traditions for all of the students who will attend for years to come. A teacher suggests that everyone write about his or her first day in the school. The students' narratives will be compiled in a book and placed in the library for future students to read. Think about what it would be like to be the first to attend a newly built school. Write a narrative for the book, and tell about that first day. Describe what you do, see, and feel throughout the day.<sup>81</sup>

**Subject:** English language arts

**Prompt:** After reading *“Dulce et Decorum Est”* by WWI poet Wilfred Owen and *“The Death of the Ball Turret Gunner”* by WWII poet Randal Jarrell. Create a Venn diagram and write a paragraph comparing and contrasting the two poets' stances toward war.

**Subject:** Psychology

**Prompt:** After hearing a lecture on birth order theory. Write a journal entry describing to what degree your personality traits align with the traits listed as typical of oldest, middle, youngest, or only children.

**Subject:** Science

**Prompt:** After reading about photosynthesis in the textbook Write an exit slip:

- A) Defining what photosynthesis is
- B) Describing the process of photosynthesis
- C) Posing one question you have about photosynthesis

**Subject:** History

**Prompt:** After studying *The Gettysburg Address*.

Create a triple entry “Say, Mean, Matter” log. Under Say, copy a passage from the text. Under Mean, present your paraphrase and interpretation of what the quote means. Under Matter, comment on why the passage is significant and is still relevant today.

**Subject:** Math/science

**Prompt:** After running a series of short, timed relay races in which students pick up colored toothpicks from a grassy field. Work together with a partner to write a prediction of the probability that certain percentages of each color of toothpicks will be collected in subsequent relay, and in what order. Hypothesize how your findings relate to the concept of protective coloration.

**Subject:** Visual arts

**Prompt:** After viewing a clips from the Disney version of *Pocahontas*. Create a quickwrite in which you describe how the depiction of Pocahontas and John Smith in the Disney version may be believable and then describe how each is portrayed as compared with real life.

### EXAMPLE 3.2.

#### **A graphic organizer to assess learning and determine action steps<sup>82</sup>**

*Write a literary analysis of “Sometimes, the Earth is Cruel.”*

#### **What students did well on in terms of their pre-tests:**

- They were able to summarize “Sometimes, the Earth is Cruel,” and understood the basic idea that the Haitians did not give up.
- They quoted or restated some facts about disasters from the articles.
- They had a basic command of sentence structure.
- They had some semblance of essay form, though without a strong introduction or conclusion.

#### **What students did not do well on or are having difficulty with in terms of their pre-tests:**

- They did not present a theme statement about the central message of the article.
- They did not quote from the text or offer commentary.
- They wrote very simple sentences without much variety.
- Their introduction lacked a formal opening that identified the text and author.

#### **Things I need to teach and my students need to practice to perform well on the post-test:**

- How to move beyond summarizing to offer interpretation based on evidence.
- How to open a formal essay with a hook; the title, author, and genre (TAG) and a thesis statement.
- How to present a theme statement as their thesis—in this case, including a specific point about how people respond to disasters and what we can learn from their example.
- How to correct errors such as, “In ‘Sometimes the Earth is Cruel’ by Leonart Pitts is about the earthquake in Haiti.” Too many students wrote ungrammatical sentences like this.
- How to vary sentences with participles and appositives.

### EXAMPLE 3.3.

#### Sample regular classroom writing tasks for assessment, by genre

**Subject:** Argumentative

**Prompt:** In a U.S. history course, students write arguments based on primary and secondary sources provided by the teacher about whether the “Emancipation Proclamation” was issued for humanitarian or military reasons. The exercise is meant to allow them to practice sourcing historical evidence. The teacher looks at daily exercises in which students provide contextual information about their sources that would help them evaluate the credibility of the information (e.g., who wrote the source, what his or her perspective was, and other contextual information).

**Subject:** Descriptive

**Prompt:** In a biology class, students collect water samples as part of a citizen science project that tests water quality in a local stream. To provide useful data, students describe their water samples using observational and measurement data. The teacher reviews students’ descriptions weekly and focuses instruction on improving descriptive writing over the course of the project.

**Subject:** Narrative

**Prompt:** Students in a creative writing course write short stories. The teacher reviews the first drafts for character development, focusing on strengths in the students’ main character developments and areas where these characters could use further development. Subsequent instruction involves analyzing published and student exemplars for character development and then revising the story focusing on qualities of the character.

**Subject:** Technical

**Prompt:** In an automotive shop class, students write instructions for repairing parts of a car. The teacher reviews students’ drafts and notices that students are having trouble sequencing their instructions. The teacher decides to teach a mini-lesson on sequencing.

**Subject:** Persuasive

**Prompt:** Students in a U.S. government class write speeches to persuade their peers to mobilize about campus issues. The teacher reviews the opening of students’ speeches to see what techniques they are using to address their audience and notices that they are overusing rhetorical questions. The teacher creates a lesson focusing on additional audience engagement techniques, such as personal stories and audience participation.

### EXAMPLE 3.4.

#### **Math teachers in different grades collaborate on assessment**

1. Middle school math teachers (6th, 7th, and 8th grade) meet and decide on three writing prompts to be used during the academic year: one at the beginning of the year, one in the middle of the year, and one at the end of the year.
2. The teachers choose the following prompt: "Please read the following math problem, solve it, and write your answer in the blank provided. Then write an instructive essay to me [your teacher], explaining the steps that are necessary to arriving at the correct answer." The topics for the problems are identified using the school's curriculum guide.
3. The teachers agree on a rubric to evaluate the instructive essay and a scoring approach. They also agree on a template for recording student responses. The template has a column for students' names and two columns for each time period (one for whether the student achieved the correct mathematical solution and one for the final overall rubric score for the instructive essay).
4. The teachers decide on the weeks of the year when the informal assessments will be administered, and they carry out the assessments.
5. After each informal assessment is conducted, each math teacher scores his or her students' writing and fills out the record template. Each teacher also computes for the class as a whole, the percentage of students who achieved the correct solution and the average, median, standard deviation, and range for overall rubric score.
6. The teachers meet and aggregate the results across all of their students to achieve a school- or group-level percentage of students who attained the correct solution as well as the summary statistics for the writing score.
7. At the end of the year, the math teachers compare the summary figures across the three informal assessments and analyze their own students' progress as well as the progress of students in the school as a whole. They use the summary information to guide a discussion of possible changes in their instruction for the following year. (See Step 2.)

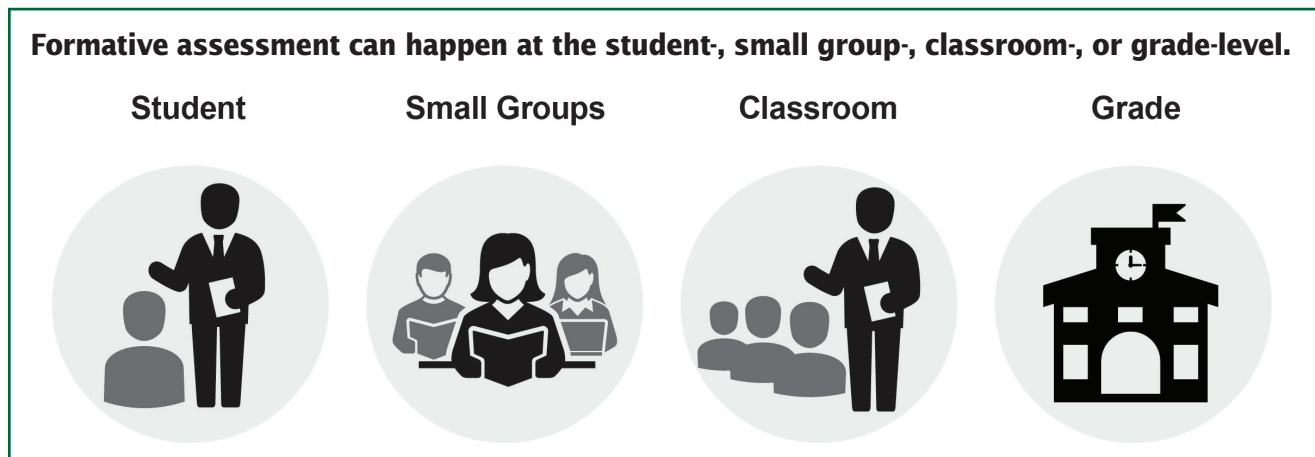
## 2. Analyze student writing to tailor instruction and target feedback.

Use assessment data to tailor instruction to students' skills and needs. Analyzing data enables teachers to identify areas where students need instruction, without making assumptions about student needs. Create lessons and choose learning objectives that challenge students to the limits of their ability, encouraging them to develop. For example, when assessments show students have mastered command of subject-verb-object sentence structure and are ready to learn to write with more sentence variety, a teacher could introduce participial phrases. Tailor instruction for individual students, small groups, classrooms, or the whole grades, as appropriate (Figure 3.2).

If the assessments show that the whole class needs additional instruction on a topic, teachers can present the material in a different way. For example, if a teacher modeled a skill when introducing it to the class, she could use exemplar texts when re-teaching the skill. Alternatively, teaching another lesson on the topic can help reinforce the skill for students. Suppose, in response to the prompt in Example 3.2, a number of students began their essays, "In the article, 'Sometimes, the Earth Is Cruel' by Leonard Pitts is about the Haiti earthquake." In this situation, a teacher can design a mini-lesson on how to write a TAG (title, author, genre) statement or prepare a mini-lesson to teach students that the subject of the sentence cannot be in a prepositional phrase.



**Figure 3.2. Tailoring instruction at different levels**



When different students have different needs, create customized lessons or assignments for individual students or small groups. For example, if half the students in a class continue to misuse common grammar in their weekly journal entries, divide the class into two groups for the next lesson based on their grammar use. Review grammar rules with the students who need the refresher, while the other students work on another assignment. Similarly, following from Example 3.4, suppose one math teacher finds after the fall assessment that five of her students consistently arrive at the wrong answer. She rereads their written proofs and deduces that all five students are making the same misstep in their mathematical reasoning. In class the following week, she could ask the rest of the class to work out additional problems she has written on the whiteboard while she takes the five students aside and re-teaches the solution to the problem, explaining the misstep.

Work with teams of teachers to tailor instruction across disciplines, grades, or classrooms. By looking at aggregated student data, teacher teams can understand skill levels in the grade or discipline overall and can jointly modify their instruction as necessary. Example 3.5 illustrates a scenario in which English language arts teachers review the range of writing performance across all of their students; identify one or two areas on which to focus during the next unit, such as organization or voice; and then modify the instruction in their own classrooms.

After identifying students' specific instructional needs, support their improvement by providing tailored feedback on their written products and their use of the writing process and strategies. Feedback can come from teachers, peers, and self-assessments (see Figure 3.3).

Prioritize the review or feedback to focus on a particular area or objective—such as tailoring persuasive writing to a specific audience or using credible sources in argumentative writing, saving feedback on other areas if time allows. For example, if a student has struggled with organization throughout the year (such as the student tracked in Example 3.6), provide detailed feedback on the organization of their writing for each draft, focusing on this continued area of need. By focusing feedback on specific areas, teachers and peers can align their feedback with current learning objectives.

Provide positive feedback and identify areas for improvement when reviewing student work. For example, structure feedback with a “Glow and Grow,” providing feedback on areas where the student’s strengths “glowed” and areas where improvement is needed for “growth.”<sup>84</sup> Alternatively, consider structuring feedback as “Praise-Question-Polish” by identifying something positive about the student’s writing (praise), something that was unclear or you didn’t understand (question), and a way that the writing could be improved (polish).<sup>85</sup>

## EXAMPLE 3.5.

### Teacher teams in the same grade collaborating to analyze student work<sup>83</sup>

During a faculty meeting, the English language arts teachers from a school review the National Writing Project’s Using Sources Tool. After teaching one unit on argument writing, each teacher selects samples of non-fiction, source-based arguments from a dozen students who represent the range of writing abilities in their classes. All the teachers work in pairs to evaluate each piece of student writing and summarize their evaluations. Toward the end of the meeting, they identify where students are doing well overall (e.g., writing debatable and defensible claims) and where they need to improve (e.g., connecting evidence to claims). The faculty agrees on one or two focus areas and collaboratively develops a teaching unit or series of instructional strategies to help students improve.

### The Using Sources Tool

The Using Sources Tool is a rubric with seven questions about features of non-fiction, source-based argument writing. It includes one open-ended question about next steps.

1. Does the writing present a claim?
  - The writing presents a claim that is nuanced, debatable and defensible.
  - The writing presents a claim that is debatable and defensible.
  - The writing presents a summary statement about source material, but that statement is not debatable.
  - The writing does not present a claim.
  
2. Does the writing distinguish between the student’s own ideas and the source material, including the use of clearly indicated paraphrasing, quotation marks, or signal phrases?
 

Not present	Developing	Competently	Effectively
-------------	------------	-------------	-------------
  
3. Does the writing select and use evidence from sources to support the claim?
 

Not present	Developing	Competently	Effectively
-------------	------------	-------------	-------------
  
4. Does the writing comment on source material in ways that connect the source material to the claim?
 

Not present	Developing	Competently	Effectively
-------------	------------	-------------	-------------
  
5. Does the writing characterize the credibility of the source material or author?
 

Not present	Developing	Competently	Effectively
-------------	------------	-------------	-------------
  
6. Overall, how would you describe the writing’s use of source material? *Select the option that best describes the writing’s overall use of source material.*
  - Skillfully integrates source material to fully support the paper’s claim
  - Uses source material to support the paper’s claim
  - Includes source material to somewhat support the paper’s claim
  - Summarizes source material, without connecting it to a claim
  - Does not use source material
  - Primarily or exclusively copies source material

*(continued)*

## Recommendation 3 (continued)

7. Does the writing use source material in any of the following purposes? *Check all that apply.*

- Illustrating; use specific examples from the text to support the claim
- Authorizing; refer to an “expert” to support the claim
- Extending; put your own “spin” on terms and ideas you take from other texts
- Countering; “push back” against the text in some way (e.g., disagree with it, challenge something it says, or interpret it differently)
- None of the above

8. What do you see as the next steps for this student?

### Scale point definitions:

- **Effectively** = The writing makes the move (i.e., distinguishing student’s and a source’s ideas, selecting evidence to support the claim, connecting evidence to the claim, or characterizing credibility of a source) in a way that contributes to the overall development. The move is purposeful, logical, and consistent.
- **Competently** = The writing makes the move (i.e., distinguishing student’s and a source’s ideas, selecting evidence to support the claim, connecting evidence to the claim, or characterizing credibility of a source). The move is generally controlled with occasional lapses, if a move is attempted more than once.
- **Developing** = The writing attempts the move (i.e., distinguishing student’s and source’s ideas, selecting evidence to support the claim, connecting evidence to the claim, or characterizing credibility of a source), but may do so in a limited or underdeveloped way. If a move is attempted more than once, its use may be very uneven.
- **Not present** = There is no evidence of a particular move in a paper (i.e., distinguishing student’s and source’s ideas, selecting evidence to support the claim, connecting evidence to the claim, or characterizing credibility of a source). Alternatively, the writing cannot be evaluated for a particular move because it summarizes or copies without attribution or may be too brief to evaluate.

Figure 3.3. Levels of feedback<sup>86</sup>

**Feedback is useful on many levels: teachers to students, peers to one another, and self-reflection by students.**



**Teacher feedback** highlights what is working in a student’s writing and provides both scaffolding and support for aspects of the student’s text or process that can be improved.



**Peer feedback** provides a level of support similar to teacher feedback, but it also teaches students how to read a peer’s writing and provide meaningful and constructive feedback.



**Self assessments** allow students to view their writing from the perspective of the reader, helping them to identify where they have been successful and where they need to rework text if others are to understand it.

## Recommendation 3 *(continued)*

When providing feedback, use the student's strength in one area to build on the area of need. For example, if a student uses transitions well in informational writing but does not use them at all in argumentative writing, highlight the transitions used in the student's informational writing piece and show where transitions are needed in his or her argumentative writing piece. By providing specific examples, teachers can help students leverage their strengths in one area to improve their skills in another.

Have students provide feedback to their peers, benefiting both the students providing the feedback and the students receiving it. Students may be able to identify problems in peers' writing more easily than they can in their own. Additionally, when students provide written feedback and assessment to peers, their comments and observations may

enhance their understanding of their own writing. Have students work together in pairs to brainstorm ways to improve their writing assignments based on feedback received from the teacher. (See Recommendation 1b for more opportunities for students to reflect upon their own work and their peers'.)

Finally, have students maintain portfolios with examples of their work throughout the year, and evaluate the portfolios periodically to identify trends and continuing needs. In addition to teacher review, students should review their own portfolios to see their growth. Portfolios provide a more complete view of students' instructional needs, as they can express skills differently in different forms of writing. Their portfolios may include writing samples across disciplines, especially when teams of teachers are working together.

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### 3. Regularly monitor students' progress while teaching writing strategies and skills.

Monitor students' progress at regular intervals to accurately track progress and adapt instruction as necessary. Collect multiple data points across different writing skills and forms of writing to build a complete picture of student progress. The frequency of monitoring will depend on students' progress and the learning goals, and requires balancing the need for information with the burden on teachers and students. For broader, comprehensive goals, such as improving students' use of voice or the overall persuasiveness of their arguments, checking student progress at the beginning, middle, and end of the semester enables mid-semester adjustment and provides enough time for instruction to impact learning. For intermediate or simpler goals, such as richness of detail for a specific piece of text or clarity of an idea in text, administering daily exit slips enables teachers to adjust each lesson and efficiently verify that students adequately master a skill before the next skill is introduced.

If the data collected reveal that students' skills vary for a particular goal, create small groups of students who have the same needs and regularly monitor their progress. Small groups should be organized on a particular topic or need and remain relatively fluid so students work together on common skills or processes with one group of students and move on to other groups as their needs change. If students in a group do not provide effective feedback to improve each other's drafts, consider adjusting the composition of the groups to include at least one student with strong editing skills.

Use tracking tools, such as the tracking sheet in Example 3.6, to provide a visual representation of student growth and areas for improvement. Tracking student progress digitally enables teachers to easily manipulate the data and share it with students and parents.

## Recommendation 3 (continued)

### EXAMPLE 3.6.

#### A sample tracking sheet to monitor student progress over time

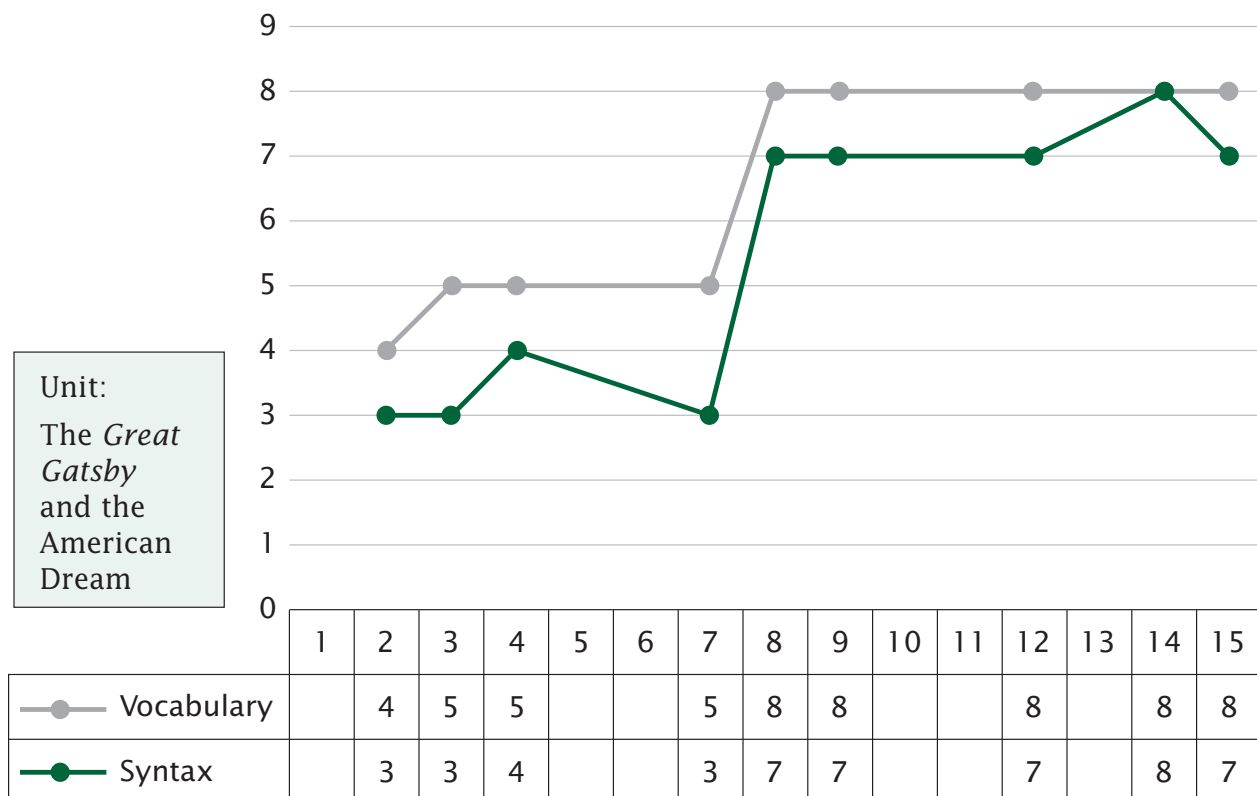
A teacher tracked analytic scores of one student over the course of three weeks, across multiple writing prompts. The teacher measured the student on vocabulary and syntax during a unit on *The Great Gatsby*.

Data from Student Writing Prompts, Week 1: Vocabulary and Syntax

	Week 1					Week 2					Week 3				
	M	T	W	R	F	M	T	W	R	F	M	T	W	R	F
Vocabulary															
Syntax															

Using a spreadsheet, the teacher graphed the total score (on a scale of 0 to 10) to create a visual representation to monitor progress over the unit (see graph below). The data illustrate that the student was struggling with vocabulary and syntax in the first week of the unit.

Noticing this, the teacher pulled a small group of students who were all struggling with vocabulary and syntax and provided a short lesson. The teacher continued to monitor student progress during Weeks 2 and 3. The graph below shows that the student improved his or her scores on vocabulary and syntax after the small-group lesson in Week 2, maintained high scores for the remainder of the unit, and was ready to advance to the next topic at the end of Week 3.



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

**Obstacle 3.1.** *Writing is a nuanced discipline and each of my students needs support with a unique collection of skills. I do not have the resources to provide that level of differentiation.*

**Panel's advice.** Individualizing instruction for each student (or even any student) might not be possible in many classrooms. Carve out a small amount of class time, even once a week for 5 or 10 minutes, and work with a small group of students who need help on a similar issue. While you work with the small group, provide another assignment for the rest of the class to do in small groups or individually. In addition, take a few minutes during your planning time to write a simple homework assignment on a piece of paper for one or two students. For example, the assignment might be a simplified version of the one the whole class gets. These instructional approaches work well for struggling students, and especially for English learners. The individualized modification also tells the student and their peers that the teacher cares about them and their progress.

For teachers of other disciplines, consult with English language arts teachers to determine best practices for identifying students with similar issues, correcting students' writing, and implementing small-group tasks that do not require much time. Teachers from two different disciplines could also consider collaborating on an assignment. A science teacher, for example, could grade the assignment for science knowledge and logic, while an English language arts teacher could grade the assignment for writing quality.

**Obstacle 3.2.** *I don't have time to regularly conduct formative assessments for all of my students.*

**Panel's advice.** Determine a schedule and approach to formative assessment that works for the specific classroom and students, and will inform instruction. Teachers do not need to use formative assessment with every activity, and they may already be assessing their

students formally or informally on a regular basis. In addition, students can reduce the burden on teachers by doing self- or peer-assessments.

Typically, it takes time to see students' growth, which might require only a few assessments every year. For instance, growth in overall writing quality can take quite a bit of time. In those cases, conducting formative assessments at the beginning, middle, and end of the year may suffice.



Think about how to use existing assignments and assessments for formative assessment. For example, have students work in pairs to grade one another's writing, and use that data for formative assessment. The key is to set up records to easily group students according to their needs and easily aggregate information across students to identify lessons to be re-taught or taught differently. Digital spreadsheets are useful for record keeping, as they can be easily sorted on specific criteria to see which students are not doing well on specific topics.

**Obstacle 3.3.** *I am not allowed to modify my school's curriculum or standards. How can I still use formative assessment?*

**Panel's advice.** Using assessments to modify instruction can be done within the existing curriculum and standards. Identify a way to use and summarize information that is already available. For example, make a list of the things students are asked to do regularly—some of the tasks or assignments they complete—that involve even brief writing, whether it is done during class or for homework. These brief writing samples can be quickly reviewed to check in on students' specific skills (e.g., topic sentences, general organization, varying sentence structure). If necessary, give an additional mini-lesson or reminder to students about the importance of the skills evaluated.



# Glossary

## A

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**Academic vocabulary** or academic language includes words that are traditionally used in academic text, but may not be often used in conversation or more general writing.

**Audience** refers to the reader for whom a piece of writing is intended. Audience can range from the writer who produces the text (e.g., a diary entry) to peers, teachers, parents, or other groups of people.

**Author's craft** includes the language choices, sentence structure, and organization an author uses to convey meaning and evoke responses in a reader. Sometimes author's craft is referred to as style.

## C

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**Cognitive-strategy sentence starters** are tools to help students write by modeling what writers might say to themselves inside their heads when composing, what readers think when annotating texts they are reading, and how writers generate ideas for texts they are writing.

## D

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A **discipline** is an area of study or a subject, such as literature, math, science, or social studies.

## E

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**Effective writing** achieves the writer's goals, is appropriate for the intended audience and context, presents ideas in a way that clearly communicate the writer's intended meanings and content, and elicits the intended response from the reader.

**Error analysis** involves looking for specific aspects of writing (e.g., a lack of transitions between paragraphs that lead the reader logically between ideas) and tracking which students have included those aspects in their writing.

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

**Exemplar texts** are examples that clearly illustrate specific features of effective writing for students.

**Exit slips** are individual assessments with a few multiple-choice or short response questions that are administered at the end of a period.

## F

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The **form** of writing refers to the type of written product produced. Different forms of writing include essays, journal entries, newspaper articles, book reviews, plays, speeches, etc.

**Formative assessment** enables teachers to regularly or continuously monitor student progress and modify instruction toward learning goals and skills.

### G

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**Genre** is a form of writing with specific features that provides context and structure for a particular purpose and audience. For example, the narrative genre includes personal or made-up stories and typically includes elements such as characters and plot, whereas the persuasive genre can include letters and essays that incorporate features such as an introduction, thesis statement, supporting material, and conclusions. Another example is the informational text genre, commonly used in the science discipline. This genre aims to convey information about the natural world; is written by an author who is presumed to be knowledgeable about the topic; includes factual content, timeless verb constructions, technical vocabulary, and descriptions of attributes; and may take on a compare-contrast, problem-solution, cause-effect, or classificatory structure.<sup>87</sup>

The **gradual release of responsibility model** is an instructional model in which a teacher teaches a strategy explicitly and then gradually decreases the level of support to the student, ultimately releasing the student to use the strategy independently.<sup>88</sup>

A **graphic organizer** is a visual tool or diagram used to arrange thoughts, ideas, concepts, and knowledge.

### 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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**On-demand writing prompts** are short writing assignments designed to assess student skills or understanding.

### P

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A **plot diagram** organizes the events and key elements of a story, including the exposition or introduction, rising action, climax, falling action, and resolution or conclusion. It is also referred to as a Freytag Pyramid.

**Purpose** refers to the objective a writer is trying to achieve with a particular piece of writing. There are four general purposes for writing: to describe, to narrate, to inform, and to persuade or analyze. Each purpose has a variety of genres that can help provide context and structure for a particular audience.

### R

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A **rubric** is an assessment tool. Rubrics typically include a set of criteria for assessing performance on written assignments, allowing for standardized evaluation according to the specified criteria. Rubrics can be used by teachers to evaluate student work, or by students for self-evaluation and/or peer review.

### S

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A writing **strategy** is a series of actions (mental, physical, or both) that writers undertake to achieve their goals. Strategies are tools that can help students generate content and carry out components of the writing process.

**Strategic thinking** refers to students' intentional thinking about how to approach a problem or achieve a goal.

**Syntactical combinations** are the patterns, structures, and formations of sentences or phrases used in writing.

### V

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**Voice** includes aspects of tone, mood, and style, and it tells the reader about the writer's personality in the composition. Voice typically is assessed by rating how well the student establishes mood, tone, style, or his or her individual personality in writing.

### W

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The **writing process** is the approach a writer uses to compose text. Components of the writing process include planning, goal setting, drafting, evaluating, revising, and editing. These components are recursive. They can occur at any point during the writing process, and students should learn to skillfully and flexibly move back and forth between the components while composing text.

## 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, 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>89</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>90</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 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 <http://whatworks.ed.gov>. Eligible studies that meet WWC group designs 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>91</sup> AND 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). OR High external validity but moderate internal validity (i.e., studies that support the generality of a relation but the causality is uncertain). <sup>92</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) <i>may vary</i> , 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 <i>may vary</i> .	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)

<b>Criteria</b>	<b>STRONG Evidence Base</b>	<b>MODERATE Evidence Base</b>	<b>MINIMAL Evidence Base</b>
<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.  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>93</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

**Steve Graham, Ed.D. (Chair)**, is the Emily Warner Professor in the Division of Educational Leadership and Innovation in Mary Lou Fulton Teachers College at Arizona State University. A former teacher, his current work focuses on how writing develops, how to teach it effectively, and how writing can be used to support reading and learning. He is currently working with colleagues on the development of digital tools to support reading and writing. Dr. Graham's research has been supported by grants from the Institute of Education Sciences (IES) and the Office of Special Education Programs. He was the chair of the What Works Clearinghouse (WWC) practice guide *Teaching Elementary School Students to be Effective Writers*, and he co-authored three influential reports about writing for the Carnegie Corporation of New York: *Writing Next*, *Writing to Read*, and *Informing Writing*. He is the current editor of the *Journal of Educational Psychology* and past editor of the *Journal of Writing Research*, *Exceptional Children*, and *Contemporary Educational Psychology*. Dr. Graham is the co-author of the *Handbook of Writing Research* (2nd edition), *Handbook of Learning Disabilities* (2nd edition), and the *APA Handbook of Educational Psychology*.

**Jill Fitzgerald, Ph.D.**, is a research professor and professor emerita at the University of North Carolina at Chapel Hill and Distinguished Research Scientist at MetaMetrics in Durham, North Carolina. Her current interests center on writing for English learners, text complexity, and reading vocabulary. Dr. Fitzgerald has published more than 100 works and has been an invited speaker at national and international research and professional conferences. Her articles have appeared extensively in a wide range of top-tier research and practitioner journals, including *Reading Research Quarterly*, *Journal of Educational Psychology*, *Research in the Teaching of English*, *Cognition and Instruction*,

*Discourse Processes*, *Review of Educational Research*, *Educational Researcher*, *American Educational Research Journal*, *The Phi Delta Kappan*, and *The Reading Teacher*. She is currently an associate editor for the *Journal of Educational Psychology* and serves on the editorial boards of several national and international journals. Dr. Fitzgerald is a member of the Reading Hall of Fame and an American Educational Research Association (AERA) fellow. She has won the AERA Outstanding Review of Research Award and the International Reading Association's Dina Feitelson Award for Research. She has been a review panelist for the Office of Education, IES, the National Institutes of Health, and the National Institute for Literacy.

**Linda D. Friedrich, Ph.D.**, is the director of research and evaluation for the National Writing Project. In her position, she leads the organization's writing assessment efforts and works closely with teacher leaders and university faculty to design research-based professional development and create formative assessment tools for writing. Dr. Friedrich is the author or co-author of numerous journal articles and a professional book, *How Teachers Become Leaders: Learning from Practice and Research*.

**Katie Greene, Ed.S.**, is an English teacher at West Forsyth High School in Cumming, Georgia. She has been teaching for ten years. She serves on the executive committee for the National Council of Teachers of English (NCTE) and is currently the chairperson of NCTE's secondary section steering committee. She is the author of numerous journal articles, and she has presented at many local, state, and national conferences. She was named a National High School Teacher of Excellence by NCTE in 2012.

**James S. Kim, Ph.D.**, is an associate professor of education at the Harvard Graduate School of Education. He studies the effectiveness of literacy reforms and interventions in improving student outcomes. Dr. Kim leads the Project for Scaling Effective Literacy Reforms, a research-based collaborative initiative to identify and

scale adaptive solutions for improving children's literacy learning opportunities and outcomes. He is an expert in conducting randomized field trials to evaluate, improve, and scale evidence-based literacy reforms. He is the principal investigator of an Investing in Innovation Fund (i3) validation study to evaluate *Reading Enhances Achievement During Summer (READS for Summer Learning)*, a low-cost, large-scale summer reading intervention for improving reading comprehension outcomes in high-poverty elementary schools. He has also led experimental studies of several widely used teacher professional development interventions for improving reading and writing outcomes in the elementary and secondary grades, including the *Pathway Project*, *Teacher Study Groups*, and the *Strategic Adolescent Reading Intervention*. He serves on the editorial boards of *Reading Research Quarterly* and the *Journal of Educational Psychology* and was the program chair for the 2014 annual meeting of the Society for Research on Educational Effectiveness.

**Carol Booth Olson, Ph.D.**, is an associate professor in the Department of Education at the University of California, Irvine (UCI), and director of the UCI site of the National Writing Project. Her research focuses on the impact of cognitive strategies-based professional development and curriculum design on the reading, thinking, and writing ability of students in grades K–12, with special emphasis on the academic literacy of mainstreamed English language learners in middle and high school. Dr. Olson received the NCTE's Alan C. Purves Award in 2007 and the Richard A. Meade Award in 2009 for outstanding research in the field of English education. She is the author of *The Reading/Writing Connection: Strategies for Teaching and Learning in the Secondary Classroom* (3rd edition).

### Staff

The panel would like to thank Julie Miller and the team of WWC certified reviewers for their contributions to this practice guide. The panel would also like to thank Ryan Devlin and Shannon Waite for their review of this 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. She is a certified WWC reviewer and helped develop the *Teaching Strategies for Improving Algebra Knowledge in Middle and High School Students* practice guide.

**Joshua Furgeson, Ph.D.**, is a senior researcher at Mathematica Policy Research and a former high school teacher. He is the lead methodologist for the special education topic areas in the WWC, and he leads the practice guides under Mathematica's contract. He has helped develop three other practice guides: *Improving Mathematical Problem Solving in Grades 4 Through 8*; *Teaching Strategies for Improving Algebra Knowledge in Middle and High School Students*; and *Foundational Skills to Support Reading for Understanding in Kindergarten Through 3rd Grade*.

**Julia Lyskawa, M.P.P.**, is a researcher at Mathematica Policy Research. She currently serves as the deputy communications lead for the WWC, as well as a certified reviewer. She led the panel's efforts to translate research findings into practitioner-friendly text for this guide. She has helped develop two other practice guides: *Teaching Math to Young Children* and *Teaching Strategies for Improving Algebra Knowledge in Middle and High School Students*.

**Claire Smither Wulsin, M.P.P.**, is a research analyst at Mathematica Policy Research. She helped coordinate the review of studies related to the panel's recommendations and helped draft the text of the practice guide. She is certified as a WWC reviewer and has worked on various other projects focused on education, including a survey of online charter schools and an evaluation of the *Teacher Incentive Fund* program.

## 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.

**Steve Graham** is an author on three commercial programs: *Spell It Write* (Zaner-Bloser); *Imagine It* (formerly *Open Court*, for McGraw-Hill); and *Read 180* (Scholastic). *Spell It Write* is a spelling program (grades K–8), but it is no longer actively marketed. The portions of *Imagine It* and *Read 180* to which he contributed are currently intended for grades 1–6. Self-regulated strategy development (SRSD) is an approach to writing instruction comprised of a set of practices, not a branded curriculum that can be purchased. Dr. Graham's wife, Dr. Karen Harris, developed SRSD. Dr. Graham's work on SRSD includes developing strategies and testing their effectiveness. The evidence base for this practice guide includes studies for which SRSD was the primary intervention.

**Jill Fitzgerald** co-developed and researched the effectiveness of materials used in a study supporting Recommendation 1.<sup>94</sup>

**Linda D. Friedrich** serves on the leadership team that developed the *College-Ready Writers Program*. She currently serves as the director of research and evaluation at the National Writing Project. With Teachers College Press, the National Writing Project co-published two of the books referenced in this guide: *Uncommonly Good Ideas: Teaching Writing in the Common Core*<sup>95</sup> and *Helping English Learners to Write: Meeting Common Core Standards, Grades 6–12*.<sup>96</sup> The National Writing Project is a 501(c)(3) not-for-profit organization. These books were used to support examples in the guide.

**Carol Booth Olson** receives royalties as a senior program consultant on *Houghton-Mifflin McDougal Littell Literature*, a language arts textbook, and *The Reading/Writing Connection: Strategies for Teaching and Learning in the Secondary Classroom* (Pearson), a professional book for teachers. She is the principal investigator of the *Pathway Project* intervention, which has been funded by grants from IES, the Office of English Language Acquisition (OELA), and the Investment in Innovation (i3) Fund. Her research studies from IES and OELA grants are mentioned in this guide. No royalties were derived from these grants. Dr. Olson co-authored studies that were included in the guide that included the *Pathway Project* as an intervention.

## Rationale for Evidence Ratings<sup>97</sup>

The level of evidence is based on the findings of studies that examined the effectiveness of recommended practices and meet What Works Clearinghouse (WWC) group design standards. The studies were primarily identified through a keyword search of several databases. The search focused on studies published between 1995 and 2015 that examined practices for teaching writing to students in grades 6–12. This search was supplemented with additional studies recommended by the expert panel.

The search identified more than 3,400 studies. These studies were then screened using eligibility requirements described in the protocol. For example, the study had to be publicly available, use an eligible design and examine students in secondary schools. A total of 55 studies met protocol requirements and were reviewed using WWC group design standards. Fifteen studies meet WWC group design standards with or without reservations and tested interventions related to one or more recommendations.

For this practice guide, study findings in an outcome domain are classified as having a positive or negative effect when the findings are either of the following:

- statistically significant ( $p \leq 0.05$ )<sup>98</sup> or
- substantively important as defined by the WWC.<sup>99</sup>

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

Some studies met WWC 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”), such as when classrooms are assigned to conditions but individual student test scores are analyzed. In these cases, the WWC adjusted for clustering and multiple comparisons within a domain.<sup>100</sup>

**Eligible populations.** The recommendations in this guide are primarily intended for teachers to use with typically developing students for whom English is the primary language. However, five of the studies used to support the recommendations were conducted with students at risk of experiencing difficulty learning to write—including students at risk for or identified as having learning disabilities and English learners.

Studies including these types of students were included if the panel confirmed that the practice examined was not designed for at-risk students and could be applicable for general education students. The external validity of these studies is limited because they did not provide evidence of effectiveness for typically developing students for whom English is the primary language.

**Eligible outcomes.** The study outcomes were classified into 10 domains related to students’ writing skills (see Table D.1). The outcome domains reflect specific types of writing knowledge and skills (e.g., including text elements of a specific genre) as well as overall writing quality. For studies that administered multiple 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.

For consistency, the level of evidence is based on outcomes closest to the end of the intervention; these immediate posttest results are listed in the appendix tables. Follow-up outcomes administered after the immediate posttests are presented in the table notes.<sup>101</sup>

**Non-writing outcomes.** Measures of achievement in areas other than writing do not contribute to the level of evidence for



Table D.1. Description of outcome domains

Outcome Domain	Description	Sample Outcomes
<b>Audience</b>	The use of appropriate style, complexity, and vocabulary for the intended audience or purpose of the composition	<ul style="list-style-type: none"> <li>Rating of the agency, identity, or rhetorical stance in a student’s writing</li> <li>Rating of patterns of word use, such as use of first-person sentences</li> </ul>
<b>Genre elements</b>	The presence or quality of specific features typical of a particular genre (e.g., the elements of a story might include setting, characters, actions, and an ending)	<ul style="list-style-type: none"> <li>Core of six organizational elements of writing in a writing sample (e.g., presence of an introductory paragraph, presence of topic sentences, and so on)</li> </ul>
<b>Ideation</b>	The development and quality of ideas included in writing. Qualitative measures include the overall richness of ideas in a composition. Quantitative measures include the number of different ideas.	<ul style="list-style-type: none"> <li>Rating of elaboration of ideas in a persuasive essay written for the National Assessment of Educational Progress</li> </ul>
<b>Organization</b>	The structure of a composition. This might include the connection between ideas in the text, as well as how well individual ideas are organized or connected to meet a writer’s purpose (often referred to as “cohesiveness”).	<ul style="list-style-type: none"> <li>Rating of the logic and coherence of the structure in an expository essay</li> </ul>
<b>Sentence structure</b>	Sentence correctness or sentence complexity	<ul style="list-style-type: none"> <li>Language Mechanics subtest of the California Achievement Test, focusing on error identification</li> <li>Percentage of correct writing sequences written for a writing prompt</li> </ul>
<b>Use of evidence</b>	Making arguments in writing supported by reasoning and data (i.e., identifying and analyzing relevant evidence, and developing and supporting claims based on that evidence)	<ul style="list-style-type: none"> <li>Number of arguments used</li> <li>Measure of the balance between pro and con arguments</li> <li>Number of sources used</li> </ul>
<b>Word choice</b>	The words used by the writer in his or her writing. Word choice may be assessed by counting specific types of words (e.g., the number of different words or the inclusion of content-specific words) or by examining the complexity of words (e.g., the number of syllables).	<ul style="list-style-type: none"> <li>Language Expression subtest of the California Achievement Test, focusing on language usage</li> </ul>
<b>Writing output</b>	The actual quantity of text produced	<ul style="list-style-type: none"> <li>Word count in a student essay</li> <li>Number of sentences in a composition</li> </ul>
<b>Writing processes</b>	Actions that writers take in the process of writing, including planning, goal setting, drafting, evaluating, revising, and editing	<ul style="list-style-type: none"> <li>Number of revisions made to a story</li> <li>Average specificity of goals for revision during process of revising a story</li> </ul>
<b>Overall writing quality</b>	The overall effectiveness of the writing. This might include assessments of intermediary outcome domains—ideation, genre (or text) elements, organization, output, sentence structure, word choice, use of evidence, and audience.	<ul style="list-style-type: none"> <li>Assessment of Literary Analysis, holistically scored for quality and depth, clarity, organization, use of textual evidence, sentence variety, and correct use of language conventions</li> <li>Score on standardized statewide English placement test</li> </ul>

any recommendation, but non-writing outcomes could plausibly be affected by writing instruction. Three studies that were eligible because they examined writing outcomes also examined reading outcomes (studies that only included non-writing outcomes were not eligible for review). In these studies, the analyses of reading outcomes met WWC design standards with or without reservations. One of these studies evaluated

an intervention that included practices from Recommendations 2 and 3, and found positive effects for measures of reading vocabulary and reading comprehension.<sup>102</sup> One study evaluated an intervention that included practices from all three recommendations, and found an indeterminate effect on a reading portion of a state standardized test.<sup>103</sup> The third study evaluated an intervention that included practices from



Recommendation 2, and also found indeterminate effects on measures of reading comprehension and morphological awareness.<sup>104</sup>

**Interventions including components from multiple recommendations.** Some study interventions included multiple instructional practices related to more than one recommendation (multi-component interventions or bundled interventions). For example, the *Pathway Project* intervention includes teaching writing strategies using a Model-Practice-Reflect approach (Recommendation 1), while integrating writing and reading instruction (Recommendation 2) and using assessments to provide feedback to students (Recommendation 3). 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 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 writing 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.

**Classifying the intervention and comparison conditions.** Some studies evaluated multiple interventions using multiple intervention groups or compared the same intervention group to multiple comparison groups. These contrasts can test multiple interventions that are related to a single recommendation. In this situation, when there were multiple related intervention or comparison groups, the panel and staff identified the contrast that provided the most direct test of the given recommendation and designated that as the most relevant contrast for the recommendation. (The WWC classifies all contrasts that share an intervention or comparison group as part of the same study, and thus only one contrast can contribute to the level of evidence.) For example, if a study tested two interventions—instruction on writing strategies, and instruction on writing strategies with text models—against a comparison group, then both contrasts against the comparison group would be relevant to Recommendation 1, but the contrast of instruction on writing strategies versus the comparison would be the more direct test of Recommendation 1 and thus more relevant.

The panel and staff considered only the most relevant contrast for the level of evidence for the recommendation, and only that contrast is described in the tables. Other contrasts are briefly described in the table notes.<sup>105</sup>

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### **Recommendation 1. Explicitly teach appropriate writing strategies using a Model-Practice-Reflect instructional cycle.**

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

WWC staff and the panel assigned a strong level of evidence based on six studies that meet WWC group design standards without reservations<sup>106</sup> and five studies that meet WWC group design standards with reservations (see Table D.2).<sup>107</sup> All studies related to this recommendation found positive effects on at least one writing outcome. Three studies also found an indeterminate effect on an

additional writing outcome,<sup>108</sup> and one study found a negative effect on an additional writing outcome.<sup>109</sup> The studies collectively demonstrated consistent positive effects on the most relevant outcomes, as well as strong internal and external validity.

**Consistency of effects on relevant outcomes.** The studies related to this recommendation showed consistent positive effects in overall writing quality and other domains relevant to writing skills and process. Six studies found positive effects on outcomes in the overall writing quality domain.<sup>110</sup> One study found an indeterminate effect on an outcome in the overall writing quality domain, but the comparison group in this study received instruction related to Recommendation 2.<sup>111</sup> This study also found a positive effect on an outcome in the writing process domain. Three other studies found positive effects in the genre elements domain,<sup>112</sup> one found positive effects in the word choice domain,<sup>113</sup> and one found positive effects in the organization domain.<sup>114</sup> No negative or indeterminate effects were found in these domains. The only study that examined a measure in the sentence structure domain found an indeterminate effect,<sup>115</sup> and the only study that examined measures in the audience domain found an indeterminate effect.<sup>116</sup>

Four studies also examined outcomes in another outcome domain, writing output, which is less related to writing quality. Findings in this outcome domain were also largely positive (three studies found positive effects in the writing output domain<sup>117</sup>), but one study found a negative effect in this domain.<sup>118</sup> The study authors noted that students in the intervention group had shorter essays because their texts became more organized, and they eliminated unnecessary text while still including all necessary components. The panel believes that word count was not an important outcome in this study, as the students' essays included the necessary elements—indicated by the positive effects in the genre elements domain—but did so more concisely.

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

The studies have strong internal validity. Six were randomized controlled trials (RCTs) with low sample attrition that meets WWC group design standards without reservations.<sup>119</sup> Three studies were RCTs with high attrition, compromised random assignment, or different assignment probabilities not accounted for in analysis. These studies demonstrated baseline equivalence and meet WWC group design standards with reservations.<sup>120</sup> Two studies were quasi-experimental designs (QED) that meets WWC group design standards with reservations.<sup>121</sup>

### **Relationship between the evidence and Recommendation 1.**

The evidence was largely aligned with both components of the recommendation (1a and 1b). Eight studies examined practices related to both Recommendation 1a and Recommendation 1b,<sup>122</sup> while three examined practices related only to Recommendation 1a (i.e., instruction on writing strategies without the Model-Practice-Reflect instructional approach).<sup>123</sup>

Seven studies examined the recommended practices without other intervention components, providing a direct test of the recommendation.<sup>124</sup> Four studies examined the effects of the recommended practice in combination with other recommended practices (integrated reading and writing instruction or formative assessment).<sup>125</sup> These latter studies did not provide a direct test of the recommendation, but the panel determined that strategy instruction with a Model-Practice-Reflect approach was a critical component of the study interventions. In combination with the seven studies that directly tested the intervention, the panel and staff determined that the evidence collectively supports a strong level of evidence.

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

Six studies compared the recommended practices to regular instructional practices.<sup>126</sup> In five studies, the comparison group received an alternate version of the treatment (e.g., prewriting conferences without a focus on

writing strategies, or instruction in writing skills such as vocabulary, spelling, grammar, and organization of ideas).<sup>127</sup>

The interventions typically occurred during the school day and lasted at least one month. Three studies examined shorter-duration studies, two implemented in a single session<sup>128</sup>, and one implemented over six sessions.<sup>129</sup> Seven studies examined interventions implemented in the classroom by teachers.<sup>130</sup> Three examined interventions delivered in supplemental sessions by researchers,<sup>131</sup> and one study did not provide information about implementation.<sup>132</sup> Overall, the comparison group activities

and the setting for the studies provided strong external and ecological validity.

The studies included diverse participants—general-education students, English learners, and students with learning and writing difficulties. All studies included participants in grades 6–12, either in middle or high school settings. The studies were conducted either in the United States (including the Northeast, Mid-Atlantic, Southeast, and West Coast regions) or in other countries that the panel determined to be similar in terms of educational context and language orthography (Portugal and Germany).

**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>Festas et al. (2015)</b> <i>Randomized controlled trial</i>	380 8th-grade students	6 schools (3 middle schools and 3 combined middle and high schools) in a major city in Portugal	Teachers implemented Self-Regulated Strategy Development (SRSD) for planning and drafting persuasive text. The intervention included 6 instructional stages for writing with gradual release to independent practice: (1) develop background knowledge, (2) discussion, (3) modeling, (4) memorization, (5) support with collaborative practice, and (6) independent performance. The intervention was implemented over 3 months.	Teachers taught their regular lessons.	genre elements = 0.82 <sup>a</sup>  writing output = -0.30
<b>Fitzgerald and Markham (1987)</b> <i>Randomized controlled trial</i>	30 6th-grade students in 2 classrooms	1 school in California	Researchers provided instruction on revising text, modeled the revision process, and then provided opportunities for group and individual revision of students' own writing. The intervention was implemented over 1 month during four 3-day cycles, plus an additional session for review.	Researchers provided instruction based on Random House's <i>Spotlight on Literature</i> series. Students read individually and aloud in groups, discussed what they read, and revised their own writing.	overall writing quality = -0.05  writing process = 0.56
<b>Hübner, Nückles, and Renkl (2010)<sup>b</sup></b> <i>Randomized controlled trial</i>	70 students	Secondary schools in Germany	Students received instruction on declarative knowledge and conditional knowledge strategies and were provided with cognitive and metacognitive prompts while they wrote learning journals. The intervention was implemented in 1 session.	Students wrote learning journals without instruction on strategies or cognitive and metacognitive prompts.	genre elements = 0.33

(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>Kim et al. (2011)<sup>c</sup></b> <i>Randomized controlled trial</i>	2,721 6th- to 12th-grade students	15 secondary schools in Santa Ana Unified School District, California	Teachers received professional development through the <i>Pathway Project</i> on reading and writing strategy instruction. They modeled the strategies in class and gave students time to practice and reflect on their use of writing strategies. They used an on-demand writing assessment to gauge student needs and progress. The intervention was implemented over 2 school years, with effects measured after 1 year and after 2 years.	Teachers received professional development that emphasized interpreting test data, using test data to improve state standardized test scores, helping students improve their summarizing strategies during reading activities, forming professional learning communities, and understanding the core English language arts textbook.	overall writing quality = 0.22 <sup>*d</sup>
<b>Midgette, Haria, and MacArthur (2008)<sup>e</sup></b> <i>Randomized controlled trial</i>	68 8th-grade students	2 middle schools in an urban/suburban school district in the Mid-Atlantic region of the United States	Students received instructions to think about the intended audience while revising an essay, including reasons and evidence to support the argument and anticipating how the audience will react to the argument.	Students received instructions to revise their essay to make general improvements.	overall writing quality = 0.49 <sup>*</sup> genre elements = 1.16 <sup>*</sup> organization = 0.60 <sup>*</sup> audience = -0.12
<b>Page-Voth and Graham (1999)<sup>f</sup></b> <i>Randomized controlled trial</i>	20 7th- and 8th-grade students with learning and writing difficulties	Multiple schools in a large suburban district in the Mid-Atlantic region of the United States	Researchers held prewriting conferences to help students create goals for writing and learn a 6-step strategy for achieving their goal. The study was conducted during 6 sessions.	Researchers held prewriting conferences focused on how students were feeling and anything new in their lives.	overall writing quality = 1.32 <sup>*</sup> writing output = 1.01 <sup>*</sup>
<b>Meets WWC Group Design Standards With Reservations</b>					
<b>De La Paz and Graham (2002)</b> <i>Randomized controlled trial that needs to demonstrate equivalence</i>	58 7th- and 8th-grade students in 9 classes	2 middle schools in a suburban district in the southeastern United States	Teachers provided instruction on PLAN and WRITE strategies for writing expository essays using SRSD procedures, including goal setting, self-monitoring, and self-evaluations. Teachers taught students strategies for providing and receiving feedback and for revising writing samples. Students participated in individual, whole-class, and small-group writing practice. The study was conducted over 6 weeks.	Teachers provided instruction on vocabulary, spelling, grammar, and generation and organization of writing ideas. Students participated in individual, whole class, and small group writing practice.	writing output = 0.71 <sup>g</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>Limpo and Alves (2014)</b> <i>Randomized controlled trial that needs to demonstrate equivalence</i>	192 students in 9 classes	1 secondary school in Portugal	Teachers provided instruction on a mnemonic strategy to write opinion essays, paired with SRSD procedures such as goal setting and self-monitoring. The study was conducted in weekly sessions over 12 weeks.	Teachers taught their regular lessons, focused on grammar and independent composition.	overall writing quality = 0.69* writing output = 1.08*
<b>Olson and Land (2008)<sup>b</sup></b> <i>Quasi-experimental design</i>	478 9th- to 12th-grade students (majority mainstreamed English learners)	Schools in 2 school districts in Los Angeles County, California	Teachers received professional development through the <i>Pathway Project</i> on reading and writing strategy instruction. They modeled the strategies and gave students time to practice and reflect on their use of writing strategies. They used an on-demand writing assessment to gauge student needs and progress. The intervention was implemented over 2 school years, with effects measured after 1 year and after 2 years.	Teachers taught their regular lessons.	overall writing quality = 0.71 <sup>ai</sup>
<b>Olson et al. (2016)<sup>j</sup></b> <i>Randomized controlled trial that needs to demonstrate equivalence</i>	1,817 7th-through 12th-grade students	16 secondary schools in Anaheim Union School District, California	Teachers received professional development through the <i>Pathway Project</i> on reading and writing strategy instruction. They modeled the strategies in class and gave students time to practice and reflect on their use of writing strategies. They used an on-demand writing assessment to gauge student needs and progress. The intervention was implemented over 2 school years, with effects measured after 1 year and after 2 years.	Teachers taught their regular lessons.	overall writing quality = 0.46 <sup>ak</sup>
<b>Stevens (2003)<sup>j</sup></b> <i>Quasi-experimental design</i>	3,986 6th-, 7th-, and 8th-grade students	5 middle schools in a large urban school district in the eastern United States	Teachers provided instruction on the writing process and also provided integrated writing and reading instruction. Students used cooperative learning practices. The program was implemented for at least 1 semester. <sup>l</sup>	Teachers taught their regular lessons.	sentence structure = 0.00 word choice = 0.52

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. 28–29).

\* = statistically significant at the 0.05 level

<sup>a</sup> This is the effect size for the posttest outcome. The study also included two-month follow-up measures in the genre elements and writing output domains. The effect size for the follow-up measure in the genre elements domain was 0.88, and it was statistically significant at  $p$ -value  $\leq 0.05$ . The effect size for the follow-up measure in the writing output domain was  $-0.48$ , and it was not statistically significant at the 0.05 level.

<sup>b</sup> This row summarizes the contrast between the prompts intervention condition and the comparison condition. The study is also used as evidence for Recommendation 2; however, the contrast supporting Recommendation 2 included a different intervention condition than this contrast. The outcomes reported are from the “transfer session” 7 days after instruction was provided. Effects from the transfer session contributed to the level of evidence. Outcomes measured immediately after instruction do not meet WWC group design standards.

<sup>c</sup> The study is also used as evidence for Recommendations 2 and 3. This row summarizes the effects after the first year of implementation of this study, as reported in **Kim et al. (2011)**. A second publication, **Olson et al. (2012)**, examines the effects after the second year of implementation in the same study grades. The Year 2 analysis is based on the same randomized sample of teachers as the Year 1 analysis, with some students enrolled in study classrooms in both years and some in only one of the years. Due to high attrition at the cluster level, **Olson et al. (2012)** meets WWC group design standards with reservations. The author-calculated effect sizes in Year 2 are 0.37 for the overall writing quality domain. One of the two measures in this domain was statistically significant at the 0.05 level.



<sup>d</sup> The study did not report the information necessary for the WWC to calculate effect sizes, and these effect sizes are reported in the study. The authors used a three-level hierarchical linear model to estimate effect sizes, and the reported parameter estimates represent effect sizes because the outcomes are standardized within grade.

<sup>e</sup> This row summarizes the contrast between the audience awareness and content goal revision condition and the general goal revision condition. The study also included another related contrast that compares a different intervention group (content goal revision condition) to the same comparison group; the findings are similar. The intervention examined in this contrast includes some components of the recommendation, but is less related to the recommendation than the intervention included in the table.

<sup>f</sup> This row summarizes the contrast between the goal-setting plus strategy use condition and the comparison condition.

<sup>g</sup> This is the effect size for the post-test outcome. The study also included a one-month follow-up measure in the writing output domain. The effect size for the follow-up measure is 0.75, and it is not statistically significant at the 0.05 level.

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

<sup>i</sup> This effect size is for the outcomes measured at the end of the first year of implementation. The study also reported outcomes measured at the end of the second year of implementation. The analysis of the second year impacts was rated does not meet WWC group design standards because the study groups were not equivalent on a baseline measure of writing performance.

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

<sup>k</sup> This effect size is for the outcomes measured at the end of the first year of implementation. The study also reported outcomes measured at the end of the second year of implementation. The analysis of the second year impacts was rated does not meet WWC group design standards because the study groups were not equivalent on a baseline measure of writing performance.

<sup>l</sup> The study is also used as evidence for Recommendation 2.

<sup>m</sup> The intervention also included reading comprehension instruction, but the panel determined that this component could not have plausibly affected writing outcomes.

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### **Recommendation 2. Integrate writing and reading to emphasize key writing features.**

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

WWC staff and the panel assigned a moderate level of evidence based on three studies that meet WWC group design standards without reservations<sup>133</sup> and five studies that meet WWC group design standards with reservations (see Table D.3).<sup>134</sup> Seven studies related to this recommendation found positive effects on at least one writing outcome.<sup>135</sup> Of these seven studies, one study also found an indeterminate effect on another writing outcome.<sup>136</sup> The final study related to this recommendation found an indeterminate effect for the only measure examined.<sup>137</sup> The studies collectively demonstrated consistent positive effects, strong internal validity, and strong external validity.

**Consistency of effects on relevant outcomes.** The studies related to this recommendation showed consistent positive effects in overall writing quality and other domains relevant to writing skills and process. Five studies found positive effects

on outcomes in the overall writing quality domain.<sup>138</sup> One study found positive effects in the genre elements domain<sup>139</sup> and one found positive effects in the word choice domain.<sup>140</sup> One study found an indeterminate effect on an outcome in the overall writing quality domain,<sup>141</sup> and one study found an indeterminate effect on a measure in the sentence structure domain (but that study also found positive effects in the word choice).<sup>142</sup> No negative effects were found in any domain. 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 seven studies that found positive effects have strong internal validity. Two were RCTs with low sample attrition that meet WWC group design standards without reservations.<sup>143</sup> Two studies were RCTs with high attrition or different assignment probabilities that were not accounted for in the analysis, and these studies demonstrated baseline equivalence and meet WWC group design standards with reservations.<sup>144</sup> Three studies were QEDs that meet WWC group design standards with reservations.<sup>145</sup>



**Relationship between the evidence and Recommendation 2.** The evidence was largely aligned with both steps of the recommendation. Six studies examined practices related to both steps of the recommendation,<sup>146</sup> while one examined practices related only to the first step.<sup>147</sup>

Three studies examined the recommended practice without other intervention components, providing a direct test of the recommendation.<sup>148</sup> The remaining four studies examined the effects of the recommended practice in combination with other recommended practices (strategy instruction, as in Recommendation 1, or formative assessment, as in Recommendation 3).<sup>149</sup> These latter studies did not provide a direct test of the recommendation, but the panel determined that integrated reading and writing instruction was a critical component of the study interventions. In combination with the three studies that directly tested the intervention, the panel and staff determined that the evidence collectively supports a moderate level of evidence.

**External validity of supporting evidence.** Six studies compared the

recommended practices to regular instructional practices.<sup>150</sup> In one study, the teachers of students in the comparison group received an alternate professional-development program not focused on integrating writing and reading instruction.<sup>151</sup>

The interventions typically occurred during the school day and lasted more than one month. Two studies examined shorter-duration studies, one implemented in a single session and one implemented over eight days.<sup>152</sup> Six studies examined interventions implemented in the classroom by teachers,<sup>153</sup> and one study did not provide information about implementation.<sup>154</sup>

The seven studies finding positive effects included diverse participants—general-education students and English learners. All studies included participants in the range of 6th to 12th grade, in both middle and high school settings. Most studies were conducted in the United States (including the Eastern and West Coast regions), with most conducted in California. One study was conducted in Germany (determined by the panel to be similar to the United States in terms of educational context and language orthography).

**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>Hübner, Nückles, and Renkl (2010)<sup>a</sup></b> <i>Randomized controlled trial</i>	70 students	Secondary schools in Germany	Students received instruction on declarative knowledge and conditional knowledge strategies and were provided with exemplar learning journals to demonstrate key text features. The intervention was implemented in 1 session.	Students wrote learning journals without instruction on strategies or exemplary texts.	genre elements = 0.61

(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
<b>Kim et al. (2011)<sup>b</sup></b> <i>Randomized controlled trial</i>	2,721 6th- to 12th-grade students	15 secondary schools in Santa Ana Unified School District, California	Teachers received professional development through the <i>Pathway Project</i> on reading and writing strategy instruction. They modeled the strategies in class and gave students time to practice and reflect on their use of writing strategies. They used an on-demand writing assessment to gauge student needs and progress. The intervention was implemented over 2 school years, with effects measured after 1 year and after 2 years.	Teachers received professional development that emphasized interpreting test data, using test data to improve state standardized test scores, helping students improve their summarizing strategies during reading activities, forming professional learning communities, and understanding the core English language arts textbook.	overall writing quality = 0.22 <sup>*c</sup>
<b>Lesaux et al. (2014)</b> <i>Randomized controlled trial</i>	712 6th-grade students	14 middle schools in a large, urban district in California	Teachers' instruction was based on the <i>Academic Language Instruction for All Students</i> program, which includes short texts with academic vocabulary words and individual and small-group activities focused on the vocabulary words. The intervention included nine 2-week units and two 1-week review units. Daily lessons were 45 minutes long and delivered during 90-minute to 120-minute English language arts blocks.	Teachers taught their regular lessons.	overall writing quality = 0.10
<b>Meets WWC Group Design Standards With Reservations</b>					
<b>Fong et al. (2015)</b> <i>Quasi-experimental design</i>	6,618 12th-grade students	24 high schools in California	Teachers used a yearlong English language arts curriculum involving a scaffolded process to teach students to read different types of texts, comprehend the texts, and respond to them in writing.	Teachers taught their regular lessons.	overall writing quality = 0.13 <sup>*d</sup>
<b>Niemi et al. (2007)<sup>e</sup></b> <i>Randomized controlled trial that needs to demonstrate equivalence</i>	204 9th-grade students	4 high schools in the Los Angeles Unified School District, California	Teachers provided instruction focused on different types of literary elements. Students read a short story and wrote essays analyzing the story. The intervention was implemented for 1 period per day over 8 days.	Teachers taught their regular lessons.	overall writing quality = 0.29 <sup>*</sup>
<b>Olson and Land (2008)<sup>f</sup></b> <i>Quasi-experimental design</i>	478 9th- to 12th-grade students (majority mainstreamed English learners)	Schools in 2 school districts in Los Angeles County, California	Teachers received professional development through the <i>Pathway Project</i> on reading and writing strategy instruction. They modeled the strategies in class and gave students time to practice and reflect on their use of writing strategies. They used an on-demand writing assessment to gauge student needs and progress. The intervention was implemented over 2 school years, with effects measured after 1 year and after 2 years.	Teachers taught their regular lessons.	overall writing quality = 0.71 <sup>*g</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
<b>Olson et al. (2016)<sup>h</sup></b> <i>Randomized controlled trial that needs to demonstrate equivalence</i>	1,817 7th- to 12th-grade students	16 secondary schools in Anaheim Union School District, California	Teachers received professional development through the <i>Pathway Project</i> on reading and writing strategy instruction. They modeled the strategies in class and gave students time to practice and reflect on their use of writing strategies. They used an on-demand writing assessment to gauge student needs and progress. The intervention was implemented over 2 school years, with effects measured after 1 year and after 2 years.	Teachers taught their regular lessons.	overall writing quality = 0.46 <sup>*i</sup>
<b>Stevens (2003)<sup>j</sup></b> <i>Quasi-experimental design</i>	3,986 6th-, 7th-, and 8th-grade students	5 middle schools in a large urban school district in the eastern United States	Teachers provided instruction on the writing process and also provided integrated writing and reading instruction. Students used cooperative learning practices. The program was implemented for at least 1 semester. <sup>k</sup>	Teachers taught their regular lessons.	sentence structure = 0.00 word choice = 0.52

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. 28–29).

\* = statistically significant at the 0.05 level

<sup>a</sup> This row summarizes the contrast between the learning journal intervention condition and the comparison condition. The study also is used as evidence for Recommendation 1; however, the contrast supporting Recommendation 1 included a different intervention condition than this contrast. The outcomes reported are from the “transfer session” 7 days after instruction was provided. Outcomes measured immediately after instruction do not meet WWC group design standards.

<sup>b</sup> The study is also used as evidence for Recommendations 1 and 3. This row summarizes the effects after the first year of implementation of this study, as reported in **Kim et al. (2011)**. A second publication, **Olson et al. (2012)**, examined the effects after the second year of implementation in the same study grades. The Year 2 analysis is based on the same randomized sample of teachers as the Year 1 analysis, with some students enrolled in study classrooms in both years and some in only one of the years. Due to high attrition at the cluster level, **Olson et al. (2012)** meets WWC group design standards with reservations. The author-calculated effect sizes in Year 2 are 0.37 for the overall writing quality domain. One of the two measures in this domain was statistically significant at the 0.05 level.

<sup>c</sup> The study did not report the information necessary for the WWC to calculate effect sizes and the presented effect sizes are as reported in the study. The authors used a three-level hierarchical linear model to estimate effect sizes, and the reported parameter estimates represent effect sizes because the outcomes are standardized within grade.

<sup>d</sup> The study did not report the information necessary for the WWC to calculate effect sizes. The presented effect sizes are as reported in the study. The authors estimate the effect size as the regression-adjusted mean difference divided by the pooled within-group standard deviation.

<sup>e</sup> This row summarizes the contrast between the language analysis intervention condition and the comparison condition.

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

<sup>g</sup> This effect size is for the outcomes measured at the end of the first year of implementation. The study also reported outcomes measured at the end of the second year of implementation. The analysis of the second year impacts was rated does not meet WWC group design standards because the study groups were not equivalent on a baseline measure of writing performance.

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

<sup>i</sup> This effect size is for the outcomes measured at the end of the first year of implementation. The study also reported outcomes measured at the end of the second year of implementation. The analysis of the second year impacts was rated does not meet WWC group design standards because the study groups were not equivalent on a baseline measure of writing performance.

<sup>j</sup> The study is also used as evidence for Recommendation 1.

<sup>k</sup> The intervention also included reading comprehension instruction, but the panel determined that this component could not have plausibly affected writing outcomes.

### **Recommendation 3. Use assessments of student writing to inform instruction and feedback.**

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

WWC staff and the panel assigned a minimal level of evidence based on one study that meets WWC group design standards without reservations<sup>155</sup> and three studies that meet WWC group design standards with reservations (see Table D.4).<sup>156</sup> All studies related to this recommendation found positive effects on at least one writing outcome, but none provided a direct test of the recommendation. Three studies examined the same intervention, which also includes components of Recommendations 1 and 2, and all took place in Southern California and focused primarily on mainstreamed English learners.<sup>157</sup> The fourth study examined an intervention that did not include components of the other recommendations, but did include an additional instructional component not related to any of the recommendations that the panel believes could plausibly affect outcomes.<sup>158</sup>

**Consistency of effects on relevant outcomes.** Three of the studies related to this recommendation found positive effects on measures of overall writing quality,<sup>159</sup> and one found positive effects on measures in the audience, organization, and use of evidence domains.<sup>160</sup> No study found indeterminate or negative effects on any outcome.

**Internal validity of supporting evidence.** One study was an RCT with low sample attrition that meets WWC group design standards

without reservations.<sup>161</sup> Two were RCTs that either had different assignment probabilities not accounted for in the analysis or had compromised random assignment. These studies demonstrated equivalence and meet WWC group design standards with reservations.<sup>162</sup> The third study was a QED that meets WWC group design standards with reservations.<sup>163</sup>

**Relationship between the evidence and Recommendation 3.** The study interventions were aligned with all steps of the recommendation, but none of the studies provided a direct test of the recommendation. Three studies examined the effects of a single intervention—the *Pathway Project*—that also includes important components from Recommendations 1 and 2.<sup>164</sup> The panel determined that formative assessment, a critical component of the intervention, could have plausibly contributed to outcomes. In the fourth study, formative assessment was implemented along with curricular units on argument writing.<sup>165</sup> The panel also determined that in this intervention, formative assessment was a critical component.

**External validity of supporting evidence.** The interventions occurred during the school day and lasted a full school year (and in one study, effects from two years of intervention were examined<sup>166</sup>). The interventions were implemented in the classroom by teachers. Three of the studies compared the recommended practices to teachers' regular lessons,<sup>167</sup> and one compared the recommended practices to teachers' instruction after having participated in an alternate professional-development program.<sup>168</sup>

Table D.4. Studies providing evidence for Recommendation 3

Study and Design	Participants and targeted grade range	Setting	Intervention condition as implemented	Comparison condition as implemented	Outcome domain and effect size
<b>Meets WWC Group Design Standards Without Reservations</b>					
<b>Kim et al. (2011)<sup>a</sup></b> <i>Randomized controlled trial<sup>a</sup></i>	2,721 6th- to 12th-grade students	15 secondary schools in Santa Ana Unified School District, California	Teachers received professional development through the <i>Pathway Project</i> on reading and writing strategy instruction. They modeled the strategies in class and gave students time to practice and reflect on their use of writing strategies. They used an on-demand writing assessment to gauge student needs and progress. The intervention was implemented over 2 school years, with effects measured after 1 year and after 2 years.	Teachers received professional development that emphasized interpreting test data, using test data to improve state standardized test scores, helping students improve their summarizing strategies during reading activities, forming professional learning communities, and understanding the core English language arts textbook.	overall writing quality = 0.22 <sup>ab</sup>
<b>Meets WWC Group Design Standards With Reservations</b>					
<b>Gallagher, Woodworth, and Arshan (2015)</b> <i>Randomized controlled trial that needs to demonstrate equivalence</i>	2,486 7th- to 9th-grade students	44 rural high-poverty districts across 10 U.S. states	Teachers received professional development through the <i>National Writing Program's College-Ready Writers Program</i> to support collaborative teaching. They delivered instruction on argument writing in 4- to 6-day units, using materials provided by the <i>College-Ready Writers Program</i> , and they used regular formative assessments to analyze student skills and needs.	Teachers taught their regular lessons.	audience = 0.16* organization = 0.20* use of evidence = 0.20*
<b>Olson and Land (2008)<sup>c</sup></b> <i>Quasi-experimental design</i>	478 9th- to 12th-grade students (majority mainstreamed English learners)	Schools in 2 school districts in Los Angeles County, California	Teachers received professional development through the <i>Pathway Project</i> on reading and writing strategy instruction. They modeled the strategies in class and gave students time to practice and reflect on their use of writing strategies. They used an on-demand writing assessment to gauge student needs and progress. The intervention was implemented over 2 school years, with effects measured after 1 year and after 2 years.	Teachers taught their regular lessons.	overall writing quality = 0.71 <sup>ad</sup>
<b>Olson et al. (2016)<sup>e</sup></b> <i>Randomized controlled trial that needs to demonstrate equivalence</i>	1,817 7th- to 12th-grade students	16 secondary schools in Anaheim Union School District, California	Teachers received professional development through the <i>Pathway Project</i> on reading and writing strategy instruction. They modeled the strategies in class and gave students time to practice and reflect on their use of writing strategies. They used an on-demand writing assessment to gauge student needs and progress. The intervention was implemented over 1 school year.	Teachers taught their regular lessons.	overall writing quality = 0.46 <sup>ef</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. 28–29).

(continued)

\* = statistically significant at the 0.05 level

<sup>a</sup> The study is also used as evidence for Recommendations 1 and 2. This row summarizes the effects after the first year of implementation of this study, as reported in **Kim et al. (2011)**. A second publication, **Olson et al. (2012)**, examined the effects after the second year of implementation in the same study grades. The Year 2 analysis is based on the same randomized sample of teachers as the Year 1 analysis, with some students enrolled in study classrooms in both years and some in only one of the years. Due to high attrition at the cluster level, **Olson et al. (2012)** meets WWC group design standards with reservations. The author-calculated effect sizes in Year 2 are 0.37 for the overall writing quality domain. One of the two measures in this domain was statistically significant at the 0.05 level.

<sup>b</sup> The study did not report the information necessary for the WWC to calculate effect sizes, and the presented effect sizes are as reported in the study. The authors used a three-level hierarchical linear model to estimate effect sizes, and the reported parameter estimates represent effect sizes because the outcomes are standardized within grade.

<sup>c</sup> The study is also used as evidence for Recommendations 1 and 2.

<sup>d</sup> This effect size is for the outcomes measured at the end of the first year of implementation. The study also reported outcomes measured at the end of the second year of implementation. The analysis of the Year 2 impacts was rated does not meet WWC group design standards because the study groups were not equivalent on a baseline measure of writing performance.

<sup>e</sup> The study is also used as evidence for Recommendations 1 and 2.

<sup>f</sup> This effect size is for the outcomes measured at the end of the first year of implementation. The study also reported outcomes measured at the end of the second year of implementation. The analysis of the Year 2 impacts was rated does not meet WWC group design standards because the study groups were not equivalent on a baseline measure of writing performance.



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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 endnotes and references pages. For more information about these studies, please see Appendix D.

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- 1 This idea is supported by the National Commission on Writing for America's Families, Schools, and Colleges (2004); the Council of Writing Program Administrators, National Council of Teachers of English, and National Writing Project (2011); and the American Diploma Project (2004). The review for this practice guide tracked which studies included non-writing outcomes and only considered studies to be eligible if they included at least one writing outcome that met review requirements. Of the studies that included at least one writing outcome and met standards (and supported a recommendation), there were no studies that examined distal outcomes like college readiness or graduation rates. There were three studies that included reading outcomes, and those are noted in Appendix D.
- 2 Langer and Applebee (1987); Quitadamo and Kurtz (2007).
- 3 Applebee and Langer (2011).
- 4 Ibid.
- 5 The protocol for this practice guide is available on the WWC website: <http://www.what-works.ed.gov>.
- 6 As described in Appendix A, single case designs and regression discontinuity designs cannot contribute to the level of evidence for a recommendation.
- 7 **Midgette, Haria, and MacArthur (2008).**
- 8 **Stevens (2003).**
- 9 For more information on teaching English learners, see the *Teaching Academic Content and Literacy to English Learners in Elementary and Middle School* practice guide (Baker et al. 2014).
- 10 Graham et al. (2012).
- 11 **De La Paz and Graham (2002); Festas et al. (2015); Fitzgerald and Markham (1987); Hübner, Nückles, and Renkl (2010); Kim et al. (2011); Limpo and Alves (2014); Midgette, Haria, and MacArthur (2008); Olson and Land (2008); Olson et al. (2016); Page-Voth and Graham (1999); Stevens (2003).**
- 12 **Festas et al. (2015); Fitzgerald and Markham (1987); Hübner, Nückles, and Renkl (2010); Kim et al. (2011); Midgette, Haria, and MacArthur (2008); Page-Voth and Graham (1999).**
- 13 **De La Paz and Graham (2002); Limpo and Alves (2014); Olson and Land (2008); Olson et al. (2016); Stevens (2003).**
- 14 **De La Paz and Graham (2002); Festas et al. (2015); Fitzgerald and Markham (1987); Kim et al. (2011); Limpo and Alves (2014); Olson and Land (2008); Olson et al. (2016); Stevens (2003).**
- 15 **De La Paz and Graham (2002); Festas et al. (2015); Fitzgerald and Markham (1987); Hübner, Nückles, and Renkl (2010); Limpo and Alves (2014); Midgette, Haria, and MacArthur (2008); Page-Voth and Graham (1999).** **Hübner, Nückles, and Renkl (2010)** includes two contrasts, one of which is related to Recommendation 1 and one of which is related to Recommendation 2.
- 16 **Kim et al. (2011); Olson and Land (2008); Olson et al. (2016); Stevens (2003).**
- 17 The Teaching Elementary Students to be Effective Writers practice guide (Graham et al. 2012) also discusses the writing process.
- 18 Ogle (1986).
- 19 Throughout the guide, examples 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 bolded. Examples without specific citations were developed in conjunction with the expert panel based on their experience, expertise, and knowledge of the related literature.
- 20 Graham and Perrin (2007).
- 21 Some of these strategies have not been evaluated by a study that meets WWC design standards. While evidence may not be available for each individual strategy, each strategy is consistent with the recommendation.
- 22 Kiuvara et al. (2012).

<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.

- 23 Ibid.
- 24 Olson, Scarcella, and Matuchniak (2015).
- 25 **De La Paz and Graham (2002).**
- 26 Some of these strategies have not been evaluated by a study that meets WWC design standards. While evidence may not be available for each individual strategy, each strategy is consistent with the recommendation.
- 27 **De La Paz and Graham (2002).**
- 28 **Page Voth and Graham (1999).**
- 29 Harris and Graham (1996).
- 30 **De La Paz and Graham (2002).**
- 31 Kiuvara et al. (2012).
- 32 Some of these strategies have not been evaluated by a study that meets WWC design standards. While evidence may not be available for each individual strategy, each strategy is consistent with the recommendation.
- 33 Some of these strategies have not been evaluated by a study that meets WWC design standards. While evidence may not be available for each individual strategy, each strategy is consistent with the recommendation.
- 34 De La Paz, Swanson, and Graham (1998); Graham (1997); Scardamalia and Bereiter (1994).
- 35 Ibid.
- 36 Olson (2015).
- 37 Benson (1979).
- 38 Flower and Hayes (1981).
- 39 Gallagher (2006).
- 40 Some of these strategies have not been evaluated by a study that meets WWC design standards. While evidence may not be available for each individual strategy, each strategy is consistent with the recommendation.
- 41 Some of these strategies have not been evaluated by a study that meets WWC design standards. While evidence may not be available for each individual strategy, each strategy is consistent with the recommendation.
- 42 Harris et al. (2008).
- 43 Olson (2010).
- 44 De La Paz and Graham (2002).
- 45 Harris and Graham (1996); Harris et al. (2008).
- 46 Adapted from Murphy and Smith (2015).
- 47 Olson (2015).
- 48 **Kim et al. (2011); Olson and Land (2008).**
- 49 Adapted from Murphy and Smith (2015).
- 50 Olinghouse, Graham, and Gillespie (2015).
- 51 Graham and Hebert (2010).
- 52 Shanahan (2016).
- 53 Fitzgerald and Shanahan (2000).
- 54 Bangert-Drowns, Hurley, and Wilkinson (2004); Graham and Hebert (2010); Graham and Perrin (2007).
- 55 **Fong et al. (2015); Hübner, Nückles, and Renkl (2010); Kim et al. (2011); Lesaux et al. (2014); Niemi et al. (2007); Olson and Land (2008); Olson et al. (2016); Stevens (2003).**
- 56 **Hübner, Nückles, and Renkl (2010); Kim et al. (2011); Lesaux et al. (2014).**
- 57 **Fong et al. (2015); Niemi et al. (2007); Olson and Land (2008); Olson et al. (2016); Stevens (2003).**
- 58 **Fong et al. (2015); Hübner, Nückles, and Renkl (2010); Kim et al. (2011); Niemi et al. (2007); Olson and Land (2008); Olson et al. (2016); Stevens (2003).**
- 59 **Fong et al. (2015); Kim et al. (2011); Niemi et al. (2007); Olson and Land (2008); Olson et al. (2016); Stevens (2003).**
- 60 **Fong et al. (2015); Hübner, Nückles, and Renkl (2010); Niemi et al. (2007). Hübner, Nückles, and Renkl (2010)** includes two contrasts, one of which is related to Recommendation 1 and one of which is related to Recommendation 2.
- 61 **Kim et al. (2011); Olson and Land (2008); Olson et al. (2016); Stevens (2003).**
- 62 **Hübner, Nückles, and Renkl (2010).**
- 63 **Lesaux et al. (2014).**
- 64 **Hübner, Nückles, and Renkl (2010); Niemi et al. (2007).**
- 65 Olson (2010).
- 66 McGinley and Denner (1987).
- 67 Olson (2015).
- 68 Adapted from Mast (2002).



- 69 For more information on teaching algebra and encouraging students to explain their mathematical reasoning, see the *Teaching Strategies for Improving Algebra Knowledge in Middle and High School Students* practice guide (Star et al. 2015).
- 70 Graham and Hebert (2010).
- 71 Adapted from Greenstein (2010).
- 72 For more information on data-driven decision making, see the *Using Student Achievement Data to Support Instructional Decision Making* practice guide (Hamilton et al. 2009).
- 73 **Kim et al. (2011).**
- 74 **Gallagher, Woodworth, and Arshan (2015); Olson and Land (2008); Olson et al. (2016).**
- 75 **Kim et al. (2011); Olson and Land (2008); Olson et al. (2016).**
- 76 **Gallagher, Woodworth, and Arshan (2015).**
- 77 Ruth and Murphy (1988).
- 78 Smith and Swain (2011).
- 79 Mueller (2014).
- 80 Kentucky Department of Education (2012).
- 81 Ibid.
- 82 C.B. Olson. (2015).
- 83 National Writing Project (2016).
- 84 Adapted from “Thinking of Teaching” blog (<http://thinkingofteaching.blogspot.ca/>).
- 85 Lewin and Shoemaker (2011).
- 86 Graham (in press).
- 87 Duke (2000).
- 88 The gradual release of responsibility model was coined by Pearson and Gallagher (1983).
- 89 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 <http://whatworks.ed.gov>.
- 90 For more information, see the WWC Frequently Asked Questions page for practice guides at <http://whatworks.ed.gov>.
- 91 This includes randomized control 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.
- 92 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; however, they have no major flaws related to internal validity other than 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.
- 93 American Educational Research Association, American Psychological Association, and National Council on Measurement in Education (1999).
- 94 **Fitzgerald and Markham (1987).**
- 95 Murphy and Smith (2015).
- 96 Olson, Scarcella, and Matuchniak (2015).
- 97 Eligible studies that meet WWC group design standards with or without reservations are indicated by **bold text** in the endnotes and references pages.
- 98 A statistically significant finding is a finding that is unlikely to occur by chance.
- 99 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  $g$ .

- 100 For multiple comparison adjustments and cluster corrections, see the *WWC Procedures and Standards Handbook, Version 3.0* at [http://ies.ed.gov/ncee/wwc/Docs/referenceresources/wwc\\_procedures\\_v3\\_0\\_standards\\_handbook.pdf](http://ies.ed.gov/ncee/wwc/Docs/referenceresources/wwc_procedures_v3_0_standards_handbook.pdf).
- 101 If a study has both immediate posttest outcomes and follow-up outcomes (administered after the immediate posttest) that meet WWC group design standards, the effects on immediate posttest outcomes appear in the appendix tables and follow-up outcomes are presented in the notes of the appendix tables. If a study does not have immediate posttest outcomes that meet WWC group design standards, but does have follow-up outcomes that meet WWC group design standards, then the follow-up outcomes are listed in the appendix tables, because they are the outcomes closest to the end of the intervention that meet WWC group design standards. In these studies, the follow-up outcomes contribute to the level of evidence.
- 102 **Stevens (2003)** found an effect size of 0.33 (not statistically significant) on a measure of reading vocabulary and an effect size of 0.25 (not statistically significant) on a measure of reading comprehension.
- 103 **Kim et al. (2011)** found an effect size of 0.05 (not statistically significant) on a measure of reading achievement.
- 104 **Lesaux et al. (2014)** found an average effect size of 0.17 (not statistically significant) on five measures in the reading comprehension domain and an average effect size of 0.22 (not statistically significant) on two measures in the morphological awareness domain.
- 105 Throughout this appendix, all endnote citations refer to the study contrast reported in the tables, unless otherwise noted.
- 106 **Festas et al. (2015); Fitzgerald and Markham (1987); Hübner, Nückles, and Renkl (2010); Kim et al. (2011); Midgette, Haria, and MacArthur (2008); Page-Voth and Graham (1999).**
- 107 **De La Paz and Graham (2002); Limpo and Alves (2014); Olson and Land (2008); Olson et al. (2016); Stevens (2003).**
- 108 **Fitzgerald and Markham (1987); Midgette, Haria, and MacArthur (2008); Stevens (2003).**
- 109 **Festas et al. (2015).**
- 110 **Kim et al. (2011); Limpo and Alves (2014); Midgette, Haria, and MacArthur (2008); Olson and Land (2008); Olson et al. (2016); Page-Voth and Graham (1999).**
- 111 **Fitzgerald and Markham (1987).**
- 112 **Festas et al. (2015); Hübner, Nückles, and Renkl (2010); Midgette, Haria, and MacArthur (2008).**
- 113 **Stevens (2003).**
- 114 **Midgette, Haria, and MacArthur (2008).**
- 115 **Stevens (2003).**
- 116 **Midgette, Haria, and MacArthur (2008).**
- 117 **De La Paz and Graham (2002); Limpo and Alves (2014); Page-Voth and Graham (1999).**
- 118 **Festas et al. (2015).**
- 119 **Festas et al. (2015); Fitzgerald and Markham (1987); Hübner, Nückles, and Renkl (2010); Kim et al. (2011); Midgette, Haria, and MacArthur (2008); Page-Voth and Graham (1999).**
- 120 **De La Paz and Graham (2002); Limpo and Alves (2014); Olson et al. (2016).**
- 121 **Olson and Land (2008); Stevens (2003).**
- 122 **De La Paz and Graham (2002); Festas et al. (2015); Fitzgerald and Markham (1987); Kim et al. (2011); Limpo and Alves (2014); Olson and Land (2008); Olson et al. (2016); Stevens (2003).**
- 123 **Hübner, Nückles, and Renkl (2010); Midgette, Haria, and MacArthur (2008); Page-Voth and Graham (1999).**
- 124 **De La Paz and Graham (2002); Festas et al. (2015); Fitzgerald and Markham (1987); Hübner, Nückles, and Renkl (2010); Limpo and Alves (2014); Midgette, Haria, and MacArthur (2008);**

- Page-Voth and Graham (1999). Hübner, Nückles, and Renkl (2010) includes two contrasts, one of which is related to Recommendation 1 and one of which is related to Recommendation 2.
- 125 Kim et al. (2011); Olson and Land (2008); Olson et al. (2016); Stevens (2003).
- 126 Festas et al. (2015); Hübner, Nückles, and Renkl (2010); Limpo and Alves (2014); Olson and Land (2008); Olson et al. (2016); Stevens (2003).
- 127 De La Paz and Graham (2002); Fitzgerald and Markham (1987); Kim et al. (2011); Midgette, Haria, and MacArthur (2008); Page-Voth and Graham (1999).
- 128 Hübner, Nückles, and Renkl (2010); Midgette, Haria, and MacArthur (2008).
- 129 Page-Voth and Graham (1999).
- 130 De La Paz and Graham (2002); Festas et al. (2015); Kim et al. (2011); Limpo and Alves (2014); Olson and Land (2008); Olson et al. (2016); Stevens (2003).
- 131 Fitzgerald and Markham (1987); Midgette, Haria, and MacArthur (2008); Page-Voth and Graham (1999).
- 132 Hübner, Nückles, and Renkl (2010).
- 133 Hübner, Nückles, and Renkl (2010); Kim et al. (2011); Lesaux et al. (2014).
- 134 Fong et al. (2015); Niemi et al. (2007); Olson and Land (2008); Olson et al. (2016); Stevens (2003).
- 135 Fong et al. (2015); Kim et al. (2011); Niemi et al. (2007); Olson and Land (2008); Olson et al. (2016); Hübner, Nückles, and Renkl (2010); Stevens (2003).
- 136 Stevens (2003).
- 137 Lesaux et al. (2014).
- 138 Fong et al. (2015); Kim et al. (2011); Niemi et al. (2007); Olson and Land (2008); Olson et al. (2016).
- 139 Hübner, Nückles, and Renkl (2010).
- 140 Stevens (2003).
- 141 Lesaux et al. (2014).
- 142 Stevens (2003).
- 143 Hübner, Nückles, and Renkl (2010); Kim et al. (2011).
- 144 Niemi et al. (2007); Olson et al. (2016).
- 145 Fong et al. (2015); Olson and Land (2008); Stevens (2003).
- 146 Fong et al. (2015); Kim et al. (2011); Niemi et al. (2007); Olson and Land (2008); Olson et al. (2016); Stevens (2003).
- 147 Hübner, Nückles, and Renkl (2010).
- 148 Fong et al. (2015); Hübner, Nückles, and Renkl (2010); Niemi et al. (2007). Hübner, Nückles, and Renkl (2010) includes two contrasts, one of which is related to Recommendation 1 and one of which is related to Recommendation 2.
- 149 Kim et al. (2011); Olson and Land (2008); Olson et al. (2016); Stevens (2003).
- 150 Fong et al. (2015); Hübner, Nückles, and Renkl (2010); Niemi et al. (2007); Olson and Land (2008); Olson et al. (2016); Stevens (2003).
- 151 Kim et al. (2011).
- 152 Hübner, Nückles, and Renkl (2010); Niemi et al. (2007).
- 153 Fong et al. (2015); Kim et al. (2011); Niemi et al. (2007); Olson and Land (2008); Olson et al. (2016); Stevens (2003).
- 154 Hübner, Nückles, and Renkl (2010).
- 155 Kim et al. (2011).
- 156 Gallagher, Woodworth, and Arshan (2015); Olson and Land (2008); Olson et al. (2016).
- 157 Kim et al. (2011); Olson and Land (2008); Olson et al. (2016).
- 158 Gallagher, Woodworth, and Arshan (2015).
- 159 Kim et al. (2011); Olson and Land (2008); Olson et al. (2016).
- 160 Gallagher, Woodworth, and Arshan (2015).
- 161 Kim et al. (2011).
- 162 Gallagher, Woodworth, and Arshan (2015); Olson et al. (2016).

- 163 **Olson and Land (2008).**
- 164 **Kim et al. (2011); Olson and Land (2008); Olson et al. (2016).**
- 165 **Gallagher, Woodworth, and Arshan (2015).**
- 166 **Ibid.**
- 167 **Gallagher, Woodworth, and Arshan (2015); Olson and Land (2008); Olson et al. (2016).**
- 168 **Kim et al. (2011).**



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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