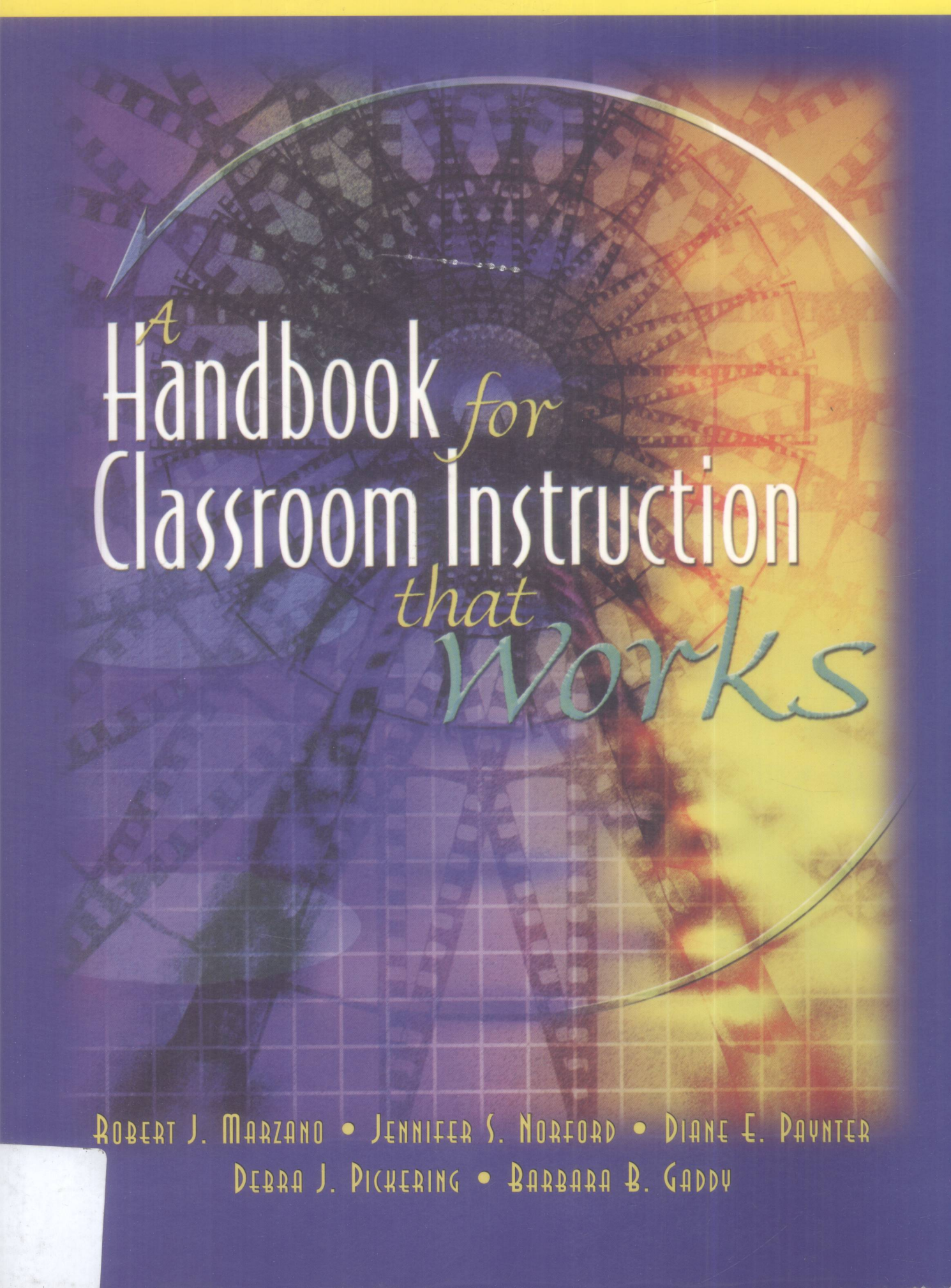
A Handbook for Classroom Instruction that Works
Robert J. Marzano • Jennifer S. Norford • Diane E. Paynter
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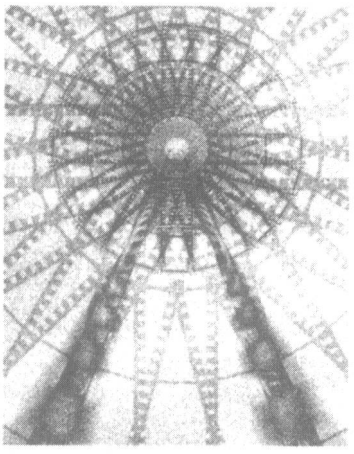

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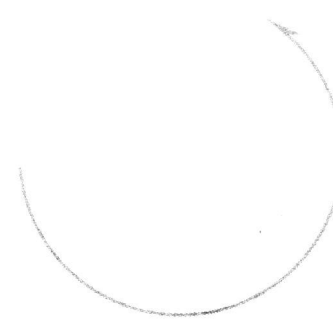

Introduction

We stand at a unique point in the history of U.S. education—a point at which the potential for truly meaningful school reform is greater than it ever has been. This is not just because we are at the beginning of a new century and a new millenium, although these are certainly noteworthy milestones. Rather, it is because we now have more than 30 years of accumulated research that provides some highly consistent answers to the question of what types of instructional strategies work best to improve student achievement. Much of that research has been synthesized and described in the book *Classroom Instruction That Works: Research-Based Strategies for Increasing Student Achievement* by Marzano, Pickering, and Pollock (ASCD, 2001). Briefly, based on a survey of thousands of comparisons between experimental and control groups, using a wide variety of instructional strategies in K–12 classrooms, across a variety of subject areas, we were able to identify nine categories of instructional strategies proven to improve student achievement:

1. Identifying similarities and differences
2. Summarizing and note taking
3. Reinforcing effort and providing recognition
4. Homework and practice
5. Representing knowledge
6. Learning groups
7. Setting objectives and providing feedback
8. Generating and testing hypotheses
9. Cues, questions, and advance organizers

This handbook is intended as a self-study guide to the effective use of specific strategies in each of these nine categories. Although you can use this handbook without having read *Classroom Instruction That Works*, we

recommend that you do so, particularly if you are interested in the research that underlies the recommendations in this handbook.

How to Use the Handbook

This handbook is organized into 11 sections. Sections 1 through 9 address the nine categories of instructional strategies listed. These strategies can be applied to all types of content, at all grade levels, with all types of students. Section 10 addresses instructional strategies that are most appropriate with specific types of knowledge, such as vocabulary terms, generalizations, and processes. Finally, Section 11 presents a framework for using the instructional strategies to improve your effectiveness in unit planning.

Except for Section 11, all sections follow the same format. Each section begins with a brief introduction describing the nature and purpose of the strategies discussed in the section. Generalizations that can be drawn from the research about the strategies also are presented. These discussions are brief with no detailed citations to the research literature. Again, if you are interested in a thorough discussion of the research on these strategies with full academic citations, we recommend *Classroom Instruction That Works*.

The introduction in each section is followed by one or more "modules" that specifically address the strategies within the section. Each module contains eight components:

1. Introduction

Each module begins with a brief introduction to the strategies presented in the module. It explains why the specific strategies in the module have been grouped together.

2. Reflecting on My Current Beliefs and Practices

This component asks you to reflect on how and why you currently use strategies that you will be studying in the module. The intent is to stimulate your thinking about your use of the strategies so that you will have a basis of comparison as you read about the strategies in the module.

3. Recommendations for Classroom Practice

The heart of each module is a set of recommendations for classroom practice. These recommendations may deal with specific strategies and

techniques or they may be generalizations about classroom practice. Each strategy or recommendation is discussed and exemplified.

4. Checking My Understanding

After the discussion of recommended classroom practices, a hypothetical situation or problem is presented. The intent is to give you an opportunity to apply what you have learned in the previous discussion. If you find it difficult to complete this hypothetical situation or problem, we recommend that you reread the content in "Recommendations for Classroom Practice."

5. Assessing the Impact on Students

Each module contains rubrics that can be used to assess how the strategies affect students' learning.

6. Planning My Classroom Activities

A series of questions is presented that, when answered, help you determine how you might use the strategies presented in the module in the context of your current practice.

7. Assessing Myself

A series of questions helps you assess how effectively you use the strategies presented in the module.

8. Module Reflection

A series of questions asks you to reflect on what you have learned about the strategies presented in the module and what you have learned about yourself as a teacher and a learner.

As we mentioned before, the handbook is as a tool for self-study. You can work through the various sections and their related modules at your own pace and identify your own sequence in terms of which sections you consider. You need not address all sections of the manual. In fact, you can derive benefit from the handbook by selecting only those sections of interest to you.

Another useful approach to using this handbook is to form study teams. The study team format is one of the best ways to build skill and confidence in the strategies presented in this handbook because it brings to bear collegial support structures that encourage analysis, discussion, problem solving, and

solution sharing in ways consistent with best practices in staff development. Study teams fulfill the following two salient functions relative to the use of this handbook:

- They provide a context for teachers to assess the extent to which the strategies in the handbook are effectively used.
- They provide an opportunity for teachers to use the strategies with structured peer support.

Some educators might question how study teams are possible within the structure of K–12 schooling. They wonder how study teams can function in the context of how the school day is arranged. To help you envision how you might use study teams with this handbook, consider the following scenario.

A Study Team Scenario

A majority of the faculty at Haystead Middle School agreed to use the *Handbook for Classroom Instruction That Works* as the focus of study during the upcoming school year. Those members of the faculty who volunteered to work on the project organized themselves into study teams of four to six individuals. Teams agreed to meet for two hours once every other week during both semesters of the year. Some teams met during the school day on released time; others met after contract hours. Because of her interest in the project and to show support for it, the principal joined one of the teams. She also arranged the school schedule to allow teachers to meet during common planning periods. Finally, the principal helped arrange for team members to receive recertification credit upon completion and acceptance of a paper describing their learning at the end of the semester.

Meeting dates, times, and location were agreed upon at the first meeting, during which time a team leader was selected. The team leader's job included making sure the meeting began and ended on time; arranging for meeting rooms, materials, and refreshments; and completing a summary sheet at the end of each session outlining what had been discussed, who had attended, and the goals for the next meeting. These summary sheets were forwarded to the principal, who met with the team leaders monthly so the team members could exchange ideas, coordinate efforts, and share resources.

Although the team leaders were volunteers, they were given a stipend of $300 per semester in partial recognition of the responsibilities they had assumed.

Each team began by selecting one section of the handbook that was of most interest to team members. Prior to a scheduled meeting, each team member was required to read each module in the section and complete all the activities. The first order of business at a meeting was to share responses to the following parts of the modules that were the subject of study:

- "Reflecting on My Current Beliefs and Practices"
- "Checking My Understanding"
- "Assessing Myself"
- "Module Reflection"

For some sections, this interchange was enough to give team members ideas about various ways to use the information presented in the modules. For some sections, however, team members agreed to engage in some action research. One or more members of the team would try out a technique described in a module and hypothesize the effect of using this technique on students. After the technique was implemented, data were collected using the rubrics in the "Assessing Student Learning" section of the module. The data were then brought back to the next group meeting, which was spent analyzing and interpreting the data and discussing the implications for classroom practice.

Periodically and at the end of each semester, each study team evaluated its progress in terms of the learning of individual team members and the effect of the project on student learning.

Designing an Approach That Works for You

Ultimately, professional development is personal. No two teachers are alike. Therefore, no two teachers need exactly the same information to enhance their performance. The same is true for individual schools. The scenario was presented to stimulate your thinking regarding the use of this handbook. Given that the content does not have to be addressed in any particular order, individual schools and teachers can design study programs that meet their individual needs and styles.

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MODULES 1–4

IDENTIFYING SIMILARITIES AND DIFFERENCES

This section concerns four related activities: comparing, classifying, creating metaphors, and creating analogies. Each of these processes involves identifying how items, events, processes, or concepts are similar and different. When we compare, we examine how things are alike and different based on characteristics: Heather's car is silver, front-wheel drive, with a bike rack on top; Bob's car is red, four-wheel drive, with ski racks on top. When we classify, we consider how items are similar and different and then group them using similarities to define categories: hibiscus and black-eyed susans are perennials; pansies and marigolds are annuals. Metaphors link two things that appear to be quite different on the surface but have some likeness, such as "My Life had stood—A Loaded Gun" (Emily Dickinson). Analogies involve relationships between pairs of elements. With analogies we look for similarities between two pairs, as in ruler is to length as measuring cup is to volume.

Research tells us that students need explicit structure when they first begin identifying similarities and differences. As they progress, however, students can use the process on their own to stimulate a wide-ranging exchange of ideas. Research also shows that graphic and symbolic representations can help students to understand and effectively use processes for identifying similarities and differences. In this section, we offer strategies and suggestions for using what the research tells us works in the classroom. We encourage you to use these and other approaches for using the process of identifying similarities and differences to enhance students' learning.

Study Group Tip

If you are using this handbook in a study group, your group might want to read and discuss the research summary about identifying similarities and differences in the companion book, *Classroom Instruction That Works*.

List of Figures

MODULE 1

COMPARING

To compare is to identify similarities and differences between or among things or ideas. We each frequently engage in the process of comparing. We compare movies we have seen; we compare restaurants where we have eaten; we compare ski runs on our favorite mountains.

In the classroom, we can use this process deliberately and rigorously to deepen students' understanding of the knowledge they are learning. We can compare Heathcliff in *Wuthering Heights* to Mr. Rochester in *Jane Eyre;* we can compare the shape of the graph of $y = 2x + 3$ to the shape of $y = 2x - 3$; we can compare strategies used in the battles of Gettysburg and Antietam during the Civil War.

Before reading "Recommendations for Classroom Practice," take some time to reflect on your current practices and beliefs about comparing by completing the Reflecting on My Current Beliefs and Practices—Comparing worksheet in Figure 1.1 (p. 10).

Recommendations for Classroom Practice

Comparing is a complex process that students will need to learn about and practice. In this module, we discuss several approaches to use in the classroom:

- give students a model for the process,
- use familiar content to teach students the steps for comparing,
- give students graphic organizers for comparing, and
- guide students as needed.

Give Students a Model

Students understand the process of comparing on some level because they compare things every day: "Friday's lunch in the cafeteria was better than today's"; "Fat Boy Slim's new music video is way cooler than the new 311 video"; "Ms. Bloomer's calculus class is a lot harder than Mr. Stacy's." To push students beyond the kind of comparing that they do automatically every day, we need to teach a systematic process and hold students accountable for rigorously using it. A model for comparing might include a set of steps for students to follow like those in Figure 1.2 (p. 11).

Comparing activities have broad applications. The key to an effective comparison is to identify important characteristics (those that will enhance students' understanding of the similarities and differences between the items). If students are comparing Malcolm X and Martin Luther King Jr. during a history class, describing similarities and differences between the two men in terms of "where they were born" might be interesting but does not add much to students' learning. A more useful characteristic might be "religious views" or "role in the Civil Rights movement."

FIGURE 1.1

Reflecting on My Current Beliefs and Practices—Comparing

What is the purpose of asking students to compare?

What kinds of activities do I use to help students compare?

I can think of a time that I asked students to compare, and I was pleased with the results. Why did it go well?

I can think of a time that I asked students to compare, and I was not pleased with the results. Why did it not go well?

What questions do I have about using comparing in my classroom?

FIGURE 1.2

Model for Comparing

Steps for Comparing

1. Select the items you want to compare.
2. Select the characteristics of the items on which you want to base your comparison.
3. Explain how the items are similar and different with respect to the characteristics.

Steps for Comparing for Younger Students

1. What do I want to compare?
2. What things about them do I want to compare?
3. How are they the same? How are they different?

(Adapted from *Dimension of Learning*, Marzano et al., 1997.)

We can make many comparisons at a surface level that do not contribute much to our learning. For example, we could compare the Lewis and Clark expedition to Pike's 1806 Arkansas River expedition on the basis of who went on the expeditions, how long each trip lasted, what kind of clothes the members of the expedition wore, and which expedition was written about the most. We might learn that Lewis and Clark became more famous than Pike, even though the Pike expedition was better dressed. Does this information add to our understanding of the importance of these expeditions? Probably not. Students will have a much better understanding of the Lewis and Clark expedition and Pike's 1806 expedition if they base their comparison on meaningful characteristics, such as each expedition's purpose, areas explored, and outcomes.

Use Familiar Content

Everyday comparisons can help students understand the steps in the comparing process. For example, if students are comparing Friday's cafeteria lunch to Tuesday's lunch, they can compare them based on a set of characteristics, such as nutritional content, variety of foods, and type of cuisine. Explaining how the items are similar and different in terms of these characteristics uncovers for students the information that lies behind the claim that Friday's cafeteria lunch was "better" than Tuesday's. Understanding and following steps in a process for comparing helps students when they use the process with content knowledge.

Give Students Graphic Organizers

Students can use graphic organizers as a visual tool to help them make comparisons. A Venn diagram uses two intersecting circles to show how items are similar and different. Similarities are shown in the intersection of the circles, and differences are indicated in the parts of each circle that do not overlap. Teachers can demonstrate the use of Venn diagrams in a couple of different ways. A Venn diagram might be used to compare two things.

In the example in Figure 1.3 (p. 12), one Venn diagram is used to compare the characteristics of rain forests and deserts. The

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