

The **Teacher's Essential Guide** Series



Jim Burke

Effective Instruction

How to:

- Use Assessment to Improve Instruction
- Increase Engagement & Comprehension
- Design Effective Lessons



Dedication:

To America's newest teachers

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Introduction

“You don’t teach a class. You teach a student.”

—Paul Baker, *Integration of Abilities*

Many of us still think of *memorable* teachers from our childhoods, those great ones we remember throughout much of our adults lives with a sense of reverence for all they gave us. Such teachers have three characteristics: they are competent in their subject matter, care deeply about students and their success, and take on a distinctive role in the classroom. Though we all aspire to be memorable teachers, it is *effective* teachers that we must strive to become and which our students need us to be. We cannot say we have taught something if our students cannot, with some independence and fluency, show us they learned it by using or doing what we taught them.

The ten elements of effective instruction in this book are divided into three sections: Instruction That Works, Classroom Culture, and Curriculum Basics. Each of the ten elements, drawn from extensive reading and research, as well as my own daily experience as a classroom teacher, focuses on guiding principles of effective teaching. Here are the “big ideas” of teaching that will help you promote understanding (not just recall), engage students in meaningful inquiry, and develop students’ ability to master such work in the future.

Before examining what effective teachers do, let's highlight some key findings from the National Research Council (NRC) on how people *learn*. In 2000, the NRC identified three key findings:

1. Students come to the classroom with preconceptions about how the world works. If their initial understanding is not engaged, they may fail to grasp the new concepts and information being taught, or they may learn these concepts in order to pass a test, but revert to their pre-conceived ideas outside the classroom.
2. To develop competence in an area of inquiry, students must: (a) have a deep foundation of factual knowledge, (b) understand facts and ideas in the context of a conceptual framework, and (c) organize knowledge in ways that facilitate retrieval and application.
3. A “metacognitive” approach to instruction can help students learn to take control of their own learning by defining learning goals and monitoring their progress in achieving them. (Brownsford, Brown, & Cooking 2000).

Keeping in mind that teaching is a skill that can be *learned*, let us move on, giving ourselves permission to try, even to fail, knowing that these are necessary stages if we are to join the ranks of those effective, even memorable teachers who inspired us to join this profession in the first place.



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Effective Instruction

Self-Assessment

For each of the items below, record your answer between 1 and 5.

1 Never 2 Rarely 3 Sometimes 4 Usually 5 Always

Effective Instruction

- I vary my instructional methods and use a range of teaching strategies.
- I teach my students how to think and learn.
- I assess students' understanding and use the results to improve my instruction.
- I incorporate a variety of tools and technology to enhance my instruction.

Classroom Culture

- I support all students to ensure their success.
- I maintain a safe and productive learning environment in my classroom.

Curriculum Basics

- I teach skills and knowledge in context and through application.
- I organize all instruction around meaningful conversations and sustained inquiries.
- I make connections to the students' lives, other studies, and the world.
- I design lessons and units for maximum learning, understanding, and engagement.

After completing this self-assessment, identify those areas of most urgent need. Then go to the corresponding chapter and learn what you can do to improve in that area.

Instruction That Works

1. Vary Your Instructional Methods and Strategies

Kids need variety to stay engaged in their learning. They need to know that if they can't learn the lesson one way, you will use another approach to help them understand whatever you are teaching. It helps to consider learning like a house that you want your students, by one means or another, to enter, inhabit, and eventually own. It makes sense, of course, to bring them in by the most obvious route: the front door. Yet, that is sometimes locked, and so students need to know that there are other ways of getting in, what Gardner (1999) calls alternate "entry points," which allow them to use what they know to learn what they do not—yet. This level of commitment to students' success pays great dividends in the classroom. You'll see greater engagement from your students and, just possibly, a deeper belief in their own efficacy. Your students will come to realize that you and your class are there to help them do what many believed they could not. That's why it's important to "differentiate" your instructional content, process, or products according to students' needs (Tomlinson 1999).

Guiding Principles

1. Provide multiple entry points into every subject or lesson.
2. Employ a range of instructional modes.
3. Use a variety of group formats and configurations.
4. Describe and demonstrate each strategy or technique.
5. Develop students' background knowledge using different techniques.

Provide multiple entry points into every subject or lesson.

Every student who comes into your class has personal interests, experiences, and abilities that he or she can use to succeed in school and life. Yet kids often do not know their own strengths and needs; nor do they know how to use them to learn. Here are a few approaches you can use to help students connect with what you teach:

Analogies: Make comparisons. Daily life in the Civil War was like. . . (Social Studies)

Stories: Tell a story about a certain experience, focusing on the choices you had to make along the way. (Health)

Numerical representations: Have your students examine what happened during the Depression by graphing data. (Economics)

Visual explanations: Challenge your class to imagine the characters in *Othello* are on a football team and then describe the role of each character. (English)

Dramatic interpretations: Have students role-play a Supreme Court case based on a constitutional amendment you are studying. (Government)

Essential questions: Ask the big questions, such as “Why do living creatures have to die?” (Biology)

Hands-on or manipulative techniques: Have students design and build a city or structure using the shapes and concepts we have studied lately.

Consider beginning your class with these activities. Upon entering the classroom, students would see the essential question and begin writing a response to it. Once students have grasped the question, you can go on to design students' learning experiences in ways that challenge them to:

Make inductions, deductions, and inferences, and draw conclusions: Have your class review Lincoln's major decisions and draw conclusions about what kind of leader he was, providing specific evidence to support your analysis. (Social Studies)

Organize information by various principles: Through discussion, generate stages of moral development, then have students arrange and apply them to the characters in a novel. (English)

Repeat a sequence of progressively more difficult tasks: Give students leveled math problems, perhaps bronze, silver, gold, so they can see their growing mastery. (Math)

Navigate their way through a carefully designed messy experience that requires them to troubleshoot increasingly difficult problems: Challenge students. Design an ecosystem, adding new complications in addition to those that naturally occur; require students to monitor and evaluate data as the experiment unfolds.

Such experiences require some initial understanding or mastery of the content. You should increase the challenges only when the students show they are ready for the next level of work.



Keep in Mind Your English language learners (ELLs) rely on you to provide multiple ways into academic content that is unfamiliar or beyond their capacity to understand. Ask yourself (and your students) what other means you can use that will help ELLs navigate the material in your class.

Employ a range of instructional modes.

Entry points are the openings through which your students can gain access to what they need to learn. Instructional modes, on the other hand, are the techniques you choose to guide their learning so that the hard work that real understanding requires can take place. How should you choose which instructional mode to use? Begin with the question, “How can I design a learning experience that will lead my students to a full understanding of what I want them to learn?” Think of modes as similar to tools: The right tool for the right job gets you where you want to go (and where your students need to be). Consider these methods or instructional approaches when you are deciding how to help students “uncover” the material, which is to say understand, be able to use, and remember what they learn.

11 Instructional Strategies to Use (Besides Lecturing)	
Instructional Approach	How It Works
Demonstrate	Show students what a successful performance looks like.
Read to Think	Read excerpts or short texts aloud as a means of introducing a subject or getting students to think about it from different perspectives.
Write to Learn	Have students write formally or informally to discover what they know about a subject, or to synthesize their learning.
Investigation	Design an inquiry for your students in the library, classroom, or computer lab that asks them to find and make sense of information.
Simulation	Provide a range of roles students can play in reader’s theater, mock trial, etc.

Construct	Provide materials and ask students to design and create an original project—a model, a project, or a poem.
Discussion	Create a structured, purposeful discussion of the material in different configurations—pairs, trios, or large groups.
Reciprocal Teaching	Ask students to teach what they have learned to others in a group or the class as a whole.
Problem-Solving	Place students in the middle of a problem they must solve using their understanding of the material.
Generate	Require students to be generative thinkers who come up with their own questions and problems, answers and solutions.
Reflect	Ask students to reflect on their learning process to increase their understanding of what they learned as well as how they learned it.



Tech Note! Use technology in ways that require kids to inquire, investigate, or create. Tech approaches can be productive so long as you choose them with the end in mind and not merely as electronic worksheets.



Use a variety of group formats and configurations.

Because people are naturally social, it makes sense to use this characteristic to help them learn. Studies consistently find groups, if used effectively, are one of the most powerful instructional strategies for improving comprehension and increasing engagement. Collaborative learning also proves ideal for English language learners who need frequent opportunities to practice their spoken language and hear how others use it. Research consistently shows that specific grouping strategies, such as literature circles (Freeman and Freeman 2007) and reciprocal teaching (Palincsar and Brown 1984), are effective with heterogeneous learners in different subject areas. The idea of learning together is not new, of course: People have always gathered in circles to solve the problems they face, realizing, as the sayings go, that “two heads are better than one,” and “many hands make light work.” As Margaret Wheatly wrote, “Human beings have always sat in circles and councils to do their best thinking, and to develop strong and trusting relationships” (2002). Here are some guidelines for using groups to enhance instruction in your class:

Provide structure and establish a clear outcome for each group, holding students accountable as both a group and individuals. In English, for example, a teacher could use small groups to have students generate a list of words that describe a character, then vote on the one that *best* describes the character; and find evidence from the text, that backs up this one “best” word.

Arrange groups heterogeneously unless students have common needs or problems that can be more efficiently addressed through targeted group instruction (e.g., ELLs needing a quick tutorial on a specific topic). In my room, for example, I will ask students to form groups based on whatever ensures the right combination for a given task (e.g., “Everyone form groups of four made up of no more than two boys, and the group must include two people from the opposite side of the room.”)

Evaluate students’ group work and have them reflect on their own processes to identify what they do well and what they could improve on as a group and as participants in that group. Ask them, for example, to list what they contributed to the work and to evaluate its effect on the final result. Post your group evaluation questions in the classroom to help students keep them in mind.

Avoid overusing groups by carefully considering whether the task would be more effective if done individually. In a math class, for instance, students can benefit from working together to solve complex problems, but they also need to work independently for the concepts to take hold. You should always have a clear instructional rationale for groups, even if it is, “It’s Friday afternoon—working in groups will energize them.”

Use both formal and informal grouping techniques for *different purposes* that allow students to work with different classmates. Some days I say, “Turn to a neighbor and compare your interpretation with theirs,” but on other occasions, when students are reading different stories, for example, I might have them meet with those reading the same story to discuss a specific question.



This last point merits more discussion. Both group formats, formal and informal, serve the common goal of providing powerful learning experiences, but there are some important differences:

Informal Groups: Such groups can be pairs or small groups of three or four, but are temporary, usually formed by students who sit next to or around the student for the sake of a quick conversation about a problem, a text, or an idea. Informal groups serve to generate ideas and solutions, clarify thinking, respond to others' work, or compare interpretations and processes. Finally, they are well suited as a way to follow up on individual work or a class discussion since they provide a context for students to elaborate on the ideas that arose in full-class discussion or while doing an assignment individually.

Formal Groups: While informal groups might work together for anywhere from one minute to a full period, formal groups are more structured, with each person having a specific role, such as the discussion director in a literature circle, for example. These groups are more assignment-based, existing for the length of a project, a sustained inquiry or experiment, or the time it takes to read a book as part of a literature circle. Also, there is a clearly defined outcome for which people are

accountable as both individuals and a group; this sense of “we must hang together or we will all hang separately” is important in such groups.

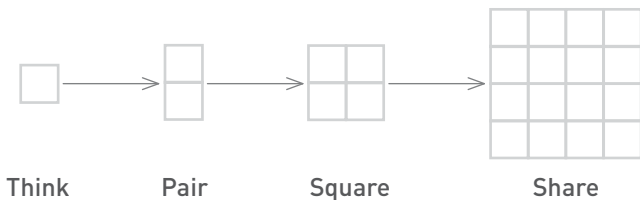


Tech Note! Online forums such as blogs and threaded discussions offer powerful new ways to use or extend classroom groups. Creating one of these virtual forums can be of great benefit to ELLs, shy students, or those who need more time to formulate their responses during group discussions.

Two other aspects of grouping deserve clarification. Research consistently shows that when teachers use groups, group size and group selection make a critical difference. The following table provides an overview of the different types of groups and their uses:

Use this Grouping	If You Want . . .	Have students . . .
Pairs (2)	informal, quick conversations where students can compare solutions,	turn to a neighbor and confer.
Small (3–4)	deeper discussion from several perspectives,	work with their assigned mixed-level group.
Large (5–7)	more student participation than full-class discussion allows,	blend assigned groups or count off to create quick groupings.
Full Class	to debrief with the whole class about what they discussed in groups or to survey the whole class’s response to material.	participate from their seats.

Ability grouping is only appropriate and effective when students share an instructional need; grouping low-performing students with low-performing students leads to even lower performance. More importantly, mixed-ability groups consistently show the greatest instructional gains. Useful ways to arrange groups heterogeneously include sorting kids by birth month, personal interests, assigned numbers, number of siblings, favorite animal, or alphabet.



One of the most effective techniques for using informal groups is commonly referred to as think-pair-square-share. Students begin by working individually, solving the problem, responding to the text, and making their initial hypotheses. Once they finish this step, they pair up and discuss their work, comparing solutions and ideas, then borrowing new ideas from each other as they arise. Next, the pair “squares up” with another pair to expand and elaborate on the discussion before returning to a full-class discussion facilitated by the teacher, who can then address enduring questions and gaps in students’ understanding before moving to the next phase of the lesson. A history teacher, for example, might assign individual students different constitutional amendments to read and interpret, then ask them to generate an example to illustrate the amendment’s principle. After that, they pair with others who studied similar amendments and discuss as a pair, until finally the whole class engages in a discussion of constitutional law and how it works.



New Teacher Note While groups are an important and powerful strategy, they are only as effective as their implementation. If allowed to choose their own groups all the time, kids will, of course, gravitate to their friends, which often undermines the social and academic benefits of working with others. Be clear and consistent in assigning groups and ensuring that students stay and work in those assigned groups.

Describe and demonstrate each strategy or technique.

Students come to school to learn what they don't already know. The better they understand what we expect them to do—how to play a certain role in a group, how to conduct an experiment, how to use a tool—the more likely they are to succeed. As the Chinese proverb says, “Tell me and I'll forget; show me and I may remember; involve me and I'll understand.” To prepare them for their “involvement,” we must model what to do so they will know what to do when asked to do it themselves. When working with new techniques or strategies, or asking students to apply those they already know at a higher level, you may need to describe and demonstrate before, during, and after.

Before using the strategies, students need to know what an effective performance looks like.

During, you need to clarify and refine students' application of the technique.

After they finish, it is often beneficial, even necessary, to have students reflect on their use of the technique or strategy to help them improve their application next time.

For example, I will begin by modeling for students how to use it, then follow up by having them reflect on how they used the graphic organizer and how it helped (or didn't help) them. Through modeling, we demystify for students those tasks that they may think are beyond them because they do not know how to break them into steps. As the following suggestions show,

language plays a crucial role in such effective instruction. When describing or demonstrating, consider the following:

Use “warm language” to help students understand and engage with the content. To “bring students inside,” you must be explicit and complete in your descriptions and demonstrations, raising powerfully worded questions and extending invitations (as opposed to issuing orders). “Cool language” serves to remind and summarize; warm language invites and stimulates interest and confidence. (Bain 2004)

Demonstrate the language you want them to use when writing or speaking by using it yourself; extend this support by using sentence starters for different thought processes so that students learn to use this language in context.

Sentence Starters to Kick-Start Student Thinking	
Cognitive Strategy	Sentence Starter
Goal Setting	“My purpose is...” “My top priority is...”
Tapping Prior Knowledge	“I already know that...”
Visualizing	“If this were a movie...”
Making Connections	“This reminds me of...”
Summarizing	“In a nutshell, this says that...”
Adopting an Alignment	“I can relate to this author because...”
Clarifying	“To understand better, I need to know more about...”
Revising Meaning	“At first I thought ____, but now I...”
Reflecting and Relating	“A conclusion I’m drawing is...”
Evaluating	“I like/don’t like ____, because...”



Provide clear, sequential explanations of what to do and how to do it, reinforcing the teaching, if necessary, by providing a handout or listing these steps on the board. When first offering such explanations, avoid specialized vocabulary that might confuse or intimidate. Instead, use more familiar, informal language. In a lab, for instance, you might begin by emphasizing the importance of following the proper sequence of steps in a particular procedure; in addition, you might give them a sheet with numbered steps they can check off as they complete each step. As the experiment unfolds, you could introduce specialized vocabulary for them to use when describing what they observe.

Introduce big concepts and basic principles through stories or analogies to illustrate and provoke connections; as students show initial understanding, add details and complexity; when they are ready, replace the familiar language or analogies with more specific and complex terms and concepts you want them to understand and use. In a health class, for example, a teacher could begin a unit on addiction by asking students how video games or cell phones are similar to a drug. Then, as the class moves into

the unit, the teacher introduces more specialized vocabulary related to addiction.

Use visual devices—overheads, whiteboards, chalkboards, Smartboards, LCDs—to explain and demonstrate, serving as a visual reference for the processes and solutions your class generates throughout the discussion.



Keep in Mind English language learners are most successful when teachers have high expectations and do not deny access to challenging content and when teachers explicitly teach and model the academic skills and the thinking, learning, reading, writing, and studying strategies all students need to know. (Olson and Land 2007)

Develop students' background knowledge using different techniques.

Background knowledge, especially about academic subjects, is essential to success in school. Background knowledge includes subject-specific knowledge about procedures and processes, as well as facts and related vocabulary; it also includes relevant knowledge of historical events, mythology, the Bible—what E. D. Hirsch (2006) has termed “cultural literacy.” Deep background knowledge is strongly correlated with adult success, according to Marzano (2004). Background knowledge means what a person already knows about a subject. While a student might feel sure that the knowledge is accurate, it might be outright incorrect, based on belief instead of evidence. Effective teachers understand that a student’s background knowledge is a part of him or her. It connects to the student’s self-image and self-esteem. Developing students’ background knowledge always involves determining what they think they know about a subject and creating a learning experience that will help them affirm or revise what they know in light of new experiences. At the same time, it requires providing a safe and supportive environment in which

they can say what they think they know and revise their thinking in public without fear of humiliation. Marzano (2006) identifies two aspects of background knowledge: the student's ability to process—understand and remember—such knowledge, and the type and quality of such information as it relates to the academic context in which the student must use it. Some argue that such processing is fixed, genetically determined, but Marzano notes studies that show cognitive processing can be improved through such techniques as cognitively guided instruction. You can enhance your students' background knowledge and their ability to access and use that knowledge by doing the following:

Assess what students already know about the subject you are studying by having them write about and discuss it with others to raise initial questions the teaching can help answer. In a science class, for example, you could begin by asking students to explain what evolution is and how it works, providing examples to illustrate what they mean.

Provide direct instruction in a way that will prepare your students to understand and remember the bigger ideas you want them to learn. This is especially important when it comes to academic vocabulary students need in order to understand a text or complete an assignment. When teaching about tone in relation to a poem, I demonstrate the meaning of several words and show how to use them.

Use indirect means to develop such background knowledge by having students read articles or textbooks, watch videos, investigate a subject on the Internet, or interview people who may have important knowledge about that subject. Students studying the Holocaust, for example, can go to the National Holocaust Museum Web site, where they can view and read stories of survivors, as well as see photographs of those who survived.



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Incorporate the relevant background knowledge into multiple lessons, through multiple means; increasing the frequency of exposure and the amount of information improves understanding and recall of the information. When introducing key terms and ideas, first discuss, then post the terms to the wall for reference.

Provide activities to enrich the background knowledge: field trips, guest speakers, performances, programs like Facing History, or ACCESS (Burke 2005). When teaching health, for example, invite a speaker from a local health food store or a culinary academy to speak about food.

It may seem obvious, but one aspect of background knowledge that deserves attention and emphasis is your own knowledge about and passion for the subject you teach. The more you know about any subject, the more you have to draw on to help your students understand and remember it. If you have a deep understanding of some aspect of geometry or physics, for example, and kids in your class have deep knowledge of a sport like baseball, you can take advantage of your fluency to connect your subject to your

students' areas of expertise and thus help them better understand the material. Famed physicist Richard Feynman was renowned for his use of stories and analogies to help students understand concepts that first eluded them, drawing on the students' background knowledge in one area to help them understand and remember new, unfamiliar material. More important, I suspect, was the evident joy he found in *doing* and in learning about his field, which is something we should all convey to our students, not just through a lesson but by drawing upon all that we continue to learn. Walt Saito, a legendary math teacher at my school, was famous for telling his students about the math problems he created for himself over the weekends, or while traveling to school on the train. As one student told a researcher studying my class, "It's weird, but Mr. Burke tells us all about what he reads all the time. He actually talks about books and all that stuff like it really matters and that makes us think it's more important."

