CHAPTER 5

Using Direct Teaching Methods

Not only is there an art in knowing a thing, but also a certain art in teaching it.

—CICERO

OVERVIEW

I will now engage in a study of actions and skills that produce learning. In this chapter, you will study direct approaches that can be used to organize and present integrated bodies of knowledge for instruction. Direct teaching and exposition approaches to teaching integrated bodies of knowledge provide us with direct instructional alternatives. Effective questioning patterns have long been associated with good teaching. As such, it is important that prospective teachers recognize and use behavior patterns related to the productive use of the different levels of questions, as well as the different kinds of questions and proven questioning techniques. Thus, in this chapter, I will focus special attention on questioning and its effective use in the classroom.

OBJECTIVES

After completing your study of Chapter 5, you should be able to do the following:

- Discuss factors that should be considered in selecting teaching techniques and strategies.
- Define direct teaching and exposition teaching and discuss the strengths and weaknesses of the various methods within these teaching strategies.
- Describe the direct teaching format and its appropriate uses.
- Explain the importance of and techniques for improving the lecture method.
- Explain the importance of incorporating different levels and types of questions.
- Identify and differentiate between the different categories of questions, as well as the levels within these categories.
- Identify and differentiate between focusing, prompting, and probing questions.
- Define wait time 1, wait time 2, halting time, and silent time.
- Define and explain the benefits derived from the use of the redirecting technique, wait times, and halting time.
- Identify guidelines that should be followed in effective questioning.
Children often need help in learning how to learn. Basically, you will have three types of students in your classes: students who can learn on their own, students who need some help in learning, and students who need a lot of help in learning. Your job will be to provide training to those students who need help with the skills needed in building concepts. Thus, your instructional purposes will be to make information meaningful, to help students develop learning and study skills, and to teach so knowledge can be applied or transferred to other areas.

Successful teachers draw from a variety of strategies (methods and procedures) in accomplishing their instructional purposes. Strategies should be selected that best serve the delivery of content and achievement of the purposes and objectives. If strategies are just arbitrarily chosen, then their emphases are on themselves, rather than on content, purposes, or objectives.

Strategies, then, should be viewed as utilitarian: They achieve the instructional intent. For example, if the intent of a social studies lesson is to share views on some controversial issue, it is obvious that the discussion method and applicable procedures should assist in achieving this objective. The lecture method, or simply showing a film, would not support the intent of the lesson.

With all the possible strategies, how do you decide which is best? Experience can often be the best basis for selection; however, other factors often must be considered in your selection of strategies:

- What are the students' needs?
- What age are the students?
- What are the students' intellectual abilities?
- What are the students' physical and mental characteristics?
- What are the students' attention spans?
- What is the lesson purpose?
- What content is to be taught?

You should take such factors into account when you consider teaching strategies and, above all, select those strategies that should best serve the teaching situation.

Some strategies influence students directly, whereas others influence students indirectly; that is, some strategies emphasize focused, teacher-directed instruction, whereas others involve students actively in their own learning. Thus, there are two major ways of delivering instruction: directly or indirectly. The direct delivery of instruction ("telling") is the "traditional" or didactic mode, in which knowledge is passed on through the teacher, the textbook, or both. The indirect avenue of instruction ("showing") provides students with access to information and experiences whereby they develop knowledge and skills.

The main strength of the direct instructional strategy is that it is efficient, especially in quickly providing information to the students. It is also an effective way to allow students to achieve mastery when learning fundamental facts, rules, formulas, or sequences. The direct instructional strategy is not an effective way to teach higher level thinking, analysis, or evaluation. It cannot be used to teach material over a long period of time or present additional details to students who have already mastered the basic concepts. In contrast, the indirect instructional strategy presents students with instructional stimuli in the form of materials, objects, and events and requires students to go beyond the basic information that they are given to make their own conclusions and generalizations. Indirect instruction allows teachers to engage their students in activities that require the students to learn independently. Students take an active role in their learning by developing ideas, testing their own conclusions, and discussing their results. This allows students to independently discover patterns and relationships in their learning and knowledge. Students go beyond the basic problems presented to them, allowing them to develop advanced levels of thinking analysis.

Although instructional strategies can be categorized as direct or indirect, the distinctions are not always clear-cut. For example, a teacher may provide information through the lecture method (from the direct instructional strategy) while using a small-group discussion method to ask students to determine the significance of information that was presented (from the indirect instruction strategy).
How much time should be devoted to each of the two modes of instruction? This is a complex question. At this point, suffice it to say that the amount of time spent varies, depending on the subject, grade level, students, time, and material available, as well as the philosophy of the teacher and the school. Experience suggests, however, a compelling relationship between method of instruction and student retention, depicted in Table 5.1, in which a blend of “telling” and “showing” techniques results in greater retention. Furthermore, varying the strategy can positively affect student motivation to learn. It is a fortunate situation when you have a choice of equally effective strategies for achieving your instructional intent. In such instances, it is possible to choose a method and procedure (strategy) that will foster motivation, improve classroom control, or cost less to implement. Indeed, you should become skilled in combining various strategies into a total lesson package.

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<thead>
<tr>
<th>Methods of Instruction</th>
<th>Recall 3 Hours Later</th>
<th>Recall 3 Days Later</th>
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<tbody>
<tr>
<td>Telling when used alone</td>
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<td>10</td>
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<tr>
<td>Showing when used alone</td>
<td>72</td>
<td>20</td>
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<tr>
<td>Blend of telling and showing</td>
<td>85</td>
<td>65</td>
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Often, too much classroom learning is rote; that is, it is the memorization of facts or associations, such as math facts, rules of grammar, words in foreign languages, or presidents and vice presidents of the United States. Optimal learning takes place when information is made meaningful. Essentially, information must be well organized and tied into an existing cognitive structure. To accomplish this task, students must be encouraged to think about new material in ways that connect it to information or ideas already in the students’ minds and to generate their own questions about the material.

The ultimate goal of teaching and learning is to develop students’ ability to apply classroom-acquired information outside the classroom or in different subjects. For example, students should be able to write a letter outside the classroom, and they should be able to use mathematical skills in their science class. This ability is referred to as transfer. With transfer, you are trying to develop the ability to apply knowledge acquired in one situation to new situations. Presumably, students in a Spanish class will be able to communicate with people who speak Spanish. The likelihood of transfer can be enhanced by making the original learning situation as similar as possible to the situation to which information or skills will be applied. For instance, science should be taught through the use of realistic problems from your students’ daily lives. Of course, another means for accomplishing transfer is through learning: Students cannot use information they do not thoroughly understand. Finally, similarity and thoroughness make it more likely that students will be able to apply newly acquired information in real-life problem situations.

The remainder of this chapter will elaborate on the direct modes of instruction: direct teaching, exposition teaching, and exposition with interaction teaching. These are modes of instruction with which you have had much experience. I will review the more indirect modes and procedures in Chapters 6 and 8 and some of the integrated direct approaches and procedures in Chapter 7.
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ON YOUR OWN 5.1  View From the Classroom

Log on to the Web-based student study site at http://www.sagepub.com/eis2study. Review the Chapter 5 teacher surveys and react to the related activities.

Direct Teaching

Direct teaching, sometimes called systematic teaching or active teaching, is a teacher-centered, skill-building instructional model with the teacher being a major information provider. The teacher’s role is to pass facts, rules, or action sequences on to students in the most direct way possible. This usually takes a presentation with explanations format (modified lecture), examples, and opportunities for practice and feedback. The direct teaching format calls for teacher-student interactions involving questions and answers, review and practice, and the correction of student errors. The direct teaching strategy works best with teaching skill subjects such as reading, writing, mathematics, grammar, computer literacy, and factual parts of science and history. Young children, slower learners, and students of all ages and abilities during the first stages of learning informative material or material that is difficult to learn will benefit most from direct teaching.

Different authors describe the specific elements of direct teaching differently (see Evertson, Emmer, Clements, Sanford, & Worsham, 1994; Hunter, 1995; Rosenshine & Stevens, 1986). They generally agree, however, as to the sequence of events that characterize effective direct teaching lessons. First, the teacher brings students up-to-date on any skills they might need for the lesson and tells them what they are going to learn. Then, the teacher devotes most of the lesson time to teaching the skills or information, giving students opportunities to practice the skills or express the information,

REFLECTIONS ON TEACHER PRACTICE 5.1  Answering Questions

1. How can you encourage students to find their own answers to all questions?

I teach sixth grade and was going home each and every day mentally wiped out because I think I answered 9,000 questions. Questions like “Should I put my name on my paper?” (Of course.) “Can I write in red pen?” (Never.) I started calling these “self-explanatory questions” because they pertained to policy that they should have had under control by now—and I think some of them just liked to hear themselves talk. Anyway, I started with discussing strategies of how they could find answers to their questions before asking me—basically just wanting to work on their listening skills. (Hey, isn’t that a standard?!) I even went so far as to give them each three tickets for the day—if they had a question to ask me (not content related) that they could have found the answer for themselves, I took a ticket away in exchange for an answer. Some kids didn’t even make it through first period.

As a result, I had a parent COMPLETELY flip out and call our assistant principal. She totally supported me to this parent, but I had to write a “letter of explanation” about why I had to use the ticket system in my classroom. I made sure that I filled it with things like “listening is a skill that will benefit all students” and “by answering fewer self-explanatory questions I have more time for one-on-one instruction with students” and so forth and so on. It just made me angry that they would even waste time questioning it. At any rate, the ticket system has worked. If students make it to the end of the day with a ticket, they get a piece of candy. Now, we have stretched it to three tickets for the week—make it to Friday and you get candy. My days go much smoother!

—MICHELLE, elementary teacher

SOURCE: Reprinted with permission from ProTeacher, a professional community for elementary school teachers (http://www.proteacher.net).
ON YOUR OWN 5.2  Reflections on Teacher Practice

Read and reflect on the viewpoints expressed in Answering Questions. Log on to the Web-based student study site at http://www.sagepub.com/eis2study and react to the related activities.

A brief description of the parts of direct teaching follows:

1. **State learning objectives and orient students to the lesson.** Tell students what they will learn and what will be expected of them. State the goals and objectives of the lesson. Establish a mental set or attitude of readiness to learn in students. This is your set induction.

2. **Review prerequisites.** Go over any skills or concepts students will need to understand the lesson. Provide advance organizers to give students a framework for understanding the new material.

3. **Present new material.** Teach the lesson, presenting information, giving concrete and varied examples and nonexamples, demonstrating concepts, and so on. Present the material in small steps. Present an outline when material is complex.

4. **Provide guided practice and conduct learning probes.** Pose questions to students to assess their level of understanding and correct their misconceptions. Give students practice problems and check for misconceptions and misunderstanding. Have students summarize in their own words. Reteach as necessary.

5. **Provide independent practice.** Give students an opportunity to practice new skills or use new information on their own, in seatwork, or in cooperative groups.

6. **Assess performance and provide feedback.** Review independent practice work or give a quiz. Give feedback on correct answers, and reteach skills as needed.

7. **Provide distributed practice and review.** Assign homework to provide distributed practice on the new material.

Madeline Hunter’s “Mastery Teaching” contains many of the features of the direct teaching strategy and has been implemented in many parts of the country. Mastery teaching includes the following five steps:

1. **Anticipatory set.** The teacher presents a short activity to get students’ minds ready for the planned lesson.

2. **Instruction or providing information (input).** Information is presented, including modeling and checking for understanding.

3. **Guided practice.** Students practice new learning under direct teacher supervision.

4. **Closure or checking for performance.** The teacher reviews or wraps up the lesson by posing questions for the class.

5. **Independent practice.** The teacher releases students to practice new materials on their own.
Keep in mind, however, that not all elements of the direct teaching strategy belong in every lesson, although they will occur in a typical unit plan composed of several lessons. Complete Expansion Activity 5.1: Direct Instruction to explore your thoughts on the implementation of the direct instruction strategy.

Let’s now look at the various components of direct instruction in more detail. Expository teaching (lecture and explanations) and questioning hold key roles in the success of direct instruction.

**Expansion Activity 5.1 Direct Instruction**

List the sequence of steps that you feel should characterize a direct instruction lesson at the grade level you expect to teach. Is it the same as those present in this section? Why did you make the changes? Share your steps with several classmates. Do they agree?

**Exposition Teaching**

*Exposition teaching* is considered to be the best way to communicate large amounts of information in a short period of time. Exposition techniques comprise the methods in which an authority—teacher, textbook, film, or microcomputer—presents information without overt interaction between the authority and the students.

**Lecture**

The *lecture* is probably the most widely used exposition teaching method. Virtually every teacher employs it to some degree, and some use it almost exclusively. Though much criticized by current educators, the lecture does possess some unique strengths.

**Strengths of the Lecture**

The lecture is an excellent way of presenting background information when building a unit frame of reference or when introducing a unit. Indeed, it often can be just the tool for setting the atmosphere or focusing for student activities. Moreover, a short lecture can effectively wrap up a unit, an activity, or a lesson. Finally, the lecture is time-efficient; that is, planning time is devoted to organizing content, rather than to devising instructional procedure. Thus, the lecture affords the teacher ample opportunity to collect related materials, assemble them into a meaningful framework, and present the information to students in a relatively short period of time. The teacher simply plans a lecture for the entire instructional period.

**Weaknesses of the Lecture**

The lecture has several serious flaws, however. First, it is passive learning, with very low student involvement. Students are expected, and even encouraged, to sit quietly, listen, and perhaps take notes. Thus, it is not a good approach for helping students develop skills in thinking, problem solving, and creativity.

Second, lectures are often boring and do not motivate. For this reason—except in unusual cases—very little of a lecture is retained by students. Indeed, because lectures tend to focus on the lowest level of cognition, understanding and transfer are often limited.

Finally, the lecture method may lead to the development of discipline problems. Most lectures generate little interest, and student attention soon wanes and turns to more stimulating and often undesirable activities. Thus, not only does the lecture lose the attention of those involved in these
unwanted activities, but the lecture itself is often disrupted. The wise teacher should always remember that most students are easily bored and usually have a low tolerance for boredom.

**Textbook Lecture**

Lecturing from the textbook could well be the most common teaching method used in today’s schools. The content of such lectures usually is structured directly from the course textbook, progressing from Chapter 1 to the end of the book without deviation, as illustrated in Table 5.2.

*Textbook teaching* requires very little teacher preparation when the structure of the textbook is strictly followed. Indeed, when one is teaching in a content area without adequate academic preparation in that area and does not wish to spend the time to become content competent, textbook teaching is an ideal technique. Thus, the lack of time needed for preparing lesson plans and lack of content mastery are reasons for the popularity of this method of instruction.

Textbook teaching suffers from all the problems of lecturing, but it has a couple of unique flaws. First, the content of the course often becomes rigid; normally, no new content is added to the lecture, and the course content is determined entirely by an external author who is not in complete harmony with the needs of students, the school, and the community. Second, the lectures can get extremely boring, because the teacher usually is lecturing about the material students were assigned to read. If no new content is added to the lesson, students tend to either read the text or listen to the lectures—seldom both.

**Planning the Lecture**

Planning is essential for a good lecture. Lectures must be well crafted to be clear and persuasive. The lecture must be designed to gain—and maintain—student attention throughout the lesson, to instill motivation, and to accomplish lesson objectives. Let’s now look at some techniques that can help achieve these ends.

The most successful lectures should be relatively short. Even older, brighter students probably won’t listen to a lecture for more than about 20 minutes. Therefore, limit your lectures to short
periods of time and periodically change to other activities (preferably to those that require active student involvement). For example, the subdivisions of a lesson (with time allotted for each activity) might be as follows:

1. Overview of topic (10 minutes)*
2. Show a film (20 minutes)
3. Discussion of film (10 minutes)
4. Demonstration (5 minutes)
5. Wrap up and review (5 minutes)*

*Denotes activities where the teacher is lecturing.

Although this plan uses lecturing where appropriate, it relies on other techniques to augment the learning—namely, discussion and demonstration. Only three tenths of the time is devoted to lecturing; most of the time allows for more student involvement.

In planning, give careful attention to the start of your lecture. Determine the specific objectives of the lecture and share them with students at the beginning. Research (Wulf & Schane, 1984) shows that, when objectives are shared, intentional learning tends to increase. Moreover, your lecture introduction should arouse student interest, be motivational, and establish a framework for the lesson (see Chapter 4 for a review of these topics).

In preparing the lecture, you must decide what students are to do while you lecture. Will students be asked to take notes? Will students be involved in some assigned seatwork? If yes, instructions and guidelines must be planned accordingly. Using the chalkboard and passing out written instructions are often the best ways for establishing these guidelines.

A lecture must have closure (see Chapter 4). Once given, the lecture theme should be related to the course and/or to what has already been taught. This can be accomplished through a review of the major points of the lecture.

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**Table 5.2 Sample Table of Contents Used in Textbook Lecturing**

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Title</th>
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<tbody>
<tr>
<td>1</td>
<td>The Science of Biology</td>
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<tr>
<td>2</td>
<td>The Nature of Living Matter</td>
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<tr>
<td>3</td>
<td>The Beginning of Life on the Earth</td>
</tr>
<tr>
<td>4</td>
<td>Units of Living Matter</td>
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<td>5</td>
<td>The Classification of Living Things</td>
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<td>6</td>
<td>The Bacteria</td>
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<td>7</td>
<td>Microbes and Disease</td>
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<td>8</td>
<td>The Seed Plants</td>
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<tr>
<td>9</td>
<td>The Higher Plant Body</td>
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<td>10</td>
<td>One-Celled Animals—The Protozoa</td>
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<tr>
<td>11</td>
<td>The Mammals</td>
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<td>12</td>
<td>Muscles and Their Actions</td>
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<tr>
<td>13</td>
<td>Life of the Past</td>
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<tr>
<td>14</td>
<td>Human Life of the Past</td>
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</tbody>
</table>

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In summary, a good lecture must be well planned if it is to be clear and persuasive. Try following this good planning formula:

- Tell students what you are going to tell them.
- Tell them.
- Tell them what you have told them.

The proper application of this formula will result in a logical, well-organized lecture with a firm introduction and a well-planned wrap-up.

**Presenting the Lecture**

An effective lecture must maintain student interest and attention from beginning to end. Factors such as the tempo, audiovisual aids, stimulus variation, and language can exert major influence on student interest and attention.

**Tempo**

The tempo, or pacing, of your lecture should be moderate (not too slow or too fast). If the pace is too fast, students become discouraged with their inability to understand and keep up; if the pace is too slow, they become bored and look elsewhere for stimulation. Use feedback checks to ascertain whether students understand your material and adjust your pace according to the feedback you obtain.

**Instructional-Media Learning Tools**

Visual aids should accompany all lectures. The use of the chalkboard, models, pictures, transparencies, diagrams, and PowerPoints can greatly enhance a lecture. Use any media that can be used to help convey your message; they should stimulate and maintain student interest. Indeed, make your lectures as multisensory as is feasible. Multisensory input will usually result in better learning.

When appropriate, teach students to take notes. A good lecturer, for example, outlines the major points on the chalkboard or on an overhead projector. Such outlines provide students with the structure and time needed for developing their note-taking skills. Once students have become skilled note takers, the practice of supplying an outline can be discontinued.

**Stimulus Variation**

As you plan your lecture, create an introduction that will grab students’ attention and augment your lecture with actions that will maintain this attention. **Stimulus variation** techniques, such as gestures, pauses, and teacher movement, can help keep student attention directed toward your lecture. As student attention wanders, a tap on the board, a hand gesture, sudden silence (a pause), or physical movement often will refocus attention back to your lecture.

Enthusiasm is contagious. If you express a high level of interest and sense of importance about your topic, students often become spellbound, anxious to find out what is so interesting. But be a bit careful: Too much enthusiasm can direct attention toward you, the teacher—and away from the lecture topic.

Humor and rhetorical questions can also attract and keep student attention. Humor can help reduce anxiety, whereas rhetorical questions, used in conjunction with pauses, give students the opportunity to consider and think about the information presented.

Finally, eye contact can help maintain attention. Eye contact gives students the feeling that you are addressing each of them personally. Indeed, eye contact can provide a teacher with valuable feedback on how well a lecture is being received. Look at your students; glance around and move about the room, based upon what you see.
Voice and Language

Delivery can make the difference between a boring lecture and a stimulating one. Keep your voice low-pitched, be expressive, and make sure all students can hear. Your voice can bring words to life. Voice volume, rate, tone, inflection, and pitch can all communicate valuable information.

Deliver your lectures in Standard English, and use vocabulary that students will understand. That is, don’t talk over your students’ heads. Also, avoid using slang expressions and street language in your lectures. Such language will only confuse your students.

Balancing the Lecture

Lecturing to students is inevitable for most teachers; however, it should be used sparingly, especially with younger students, and mixed with other appropriate methods. For example, a teacher could follow up a short lecture by having students complete a worksheet, by conducting a small-group discussion, or by asking students to conduct an investigation.

Indeed, a lesson or 50-minute class period can often be divided into a number of short lectures, with a distinct change in modality between lectures. These changes retain students’ attention and hold their interest for the instructional period. Above all, adjust your lecture time and style to students’ attention span. Break up your lecture with other methods and activities. Devise a questioning sequence, give students a problem to solve, or give students a short break.

APPLY AND REFLECT 5.2

Lectures can be boring. How have your past teachers who used the lecture method made them more interesting? If you plan to use the lecture method extensively, how will you keep your students interested and involved?

Variants of the Lecture

Let’s now examine some of the commonly used variants of the lecture. Two such variants are the tellecture and prerecorded lecture.
Telelecture

Normally, the lecturer and students are in the same room. In some rural areas, however, an insufficient number of students needing or desiring a course in one district may not warrant the hiring of a teacher for that course. Through technology, however, it is possible for several districts to “hire” a needed teacher and to transmit lectures from a studio classroom to other locations by means of telephone, cable, or microwave. This telelecture enables students who are not in the immediate classroom to hear the lectures. The remote students may talk to the lecturer and ask questions by means of a telephone link. Special science, mathematics, and language courses are being taught in this manner across the nation.

Prerecorded Lecture

A lecture is easily captured on tape or film. Such tapes and films often are prepared by local school districts and by commercial publishers. Prerecorded lectures, however, have several disadvantages when compared with live lectures. First, and perhaps most important, there is no direct contact between students and lecturer; no minute-by-minute adjustments can be made based on feedback and questions. In addition, student attention becomes a major problem when the lecture is on tape or film; attention lags more quickly than when a person is actually present. Finally, tapes and films quickly become obsolete as new information is gleaned regarding content and teaching techniques.

Despite the flaws, prerecorded lectures have some merits. Most important is their capacity for individualized instruction because a tape or film can be played as many times as desirable. I will address individualization of instruction in greater detail in the next chapter.

Table 5.3 summarizes the different direct teaching and the exposition teaching methods. Review the summary and complete Review and Reflective Exercise 5.1.

Exposition With Interaction Teaching

Exposition with interaction teaching is a method of teaching in which an authority presents information and follows it up with questioning that determines whether that information has been understood. Essentially, this method is a two-phase technique: First, information is disseminated by the teacher or through students’ study of written material. Second, the teacher checks for comprehension by asking questions to assess student understanding of the material explained or studied.

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<thead>
<tr>
<th>Table 5.3 Exposition Teaching</th>
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<tbody>
<tr>
<td><strong>Method</strong></td>
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<tr>
<td>Direct teaching</td>
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<tr>
<td>Lecture</td>
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<tr>
<td>Telelecture</td>
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<tr>
<td>Textbook lecture</td>
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<tr>
<td>Prerecorded lecture</td>
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Lectures need not be passive learning. They can be made stimulating.

The comprehension monitoring phase of this teaching technique requires that the teacher be knowledgeable and an effective questioner. Because questioning is so essential to the overall success of exposition with interaction, let’s first analyze this important skill in some detail.

The Art of Questioning

Proper questioning is a sophisticated art at which many of us are less than proficient even though we have asked thousands of questions in our lives. Research indicates that questioning is second only to lecturing in popularity as a teaching method. Teachers spend anywhere from 35% to 50% of their instructional time conducting questioning sessions. Teachers ask questions for a variety of purposes, including

- To develop interest and motivate students
- To evaluate students’ preparation and check on homework
- To develop critical thinking skills
- To review and summarize previous lessons
- To assess achievement of objectives

Questioning is an important part of the teaching-learning process because it enables teachers and students to establish what is already known, to use and extend this knowledge, and then to develop new ideas. It also provides a structure to examine ideas and information. Questioning is important to developing reflective and metacognitive thinking. It requires students to reflect on their understandings and can lead to changes and improvements in learning, thinking, and teaching.

Good questioners must be skilled in formulating good questions: Questions must be asked at the appropriate level, they must be of the appropriate type, and, above all, they must be worded properly. Moreover, the art of questioning requires mastery of techniques for follow-up to students’ responses—or lack of response—to questioning. The kinds of questions asked, the way they are asked, and the responses given affect both the self-esteem of the students and their participation. Let’s now look at the different levels at which questions may be asked.
Do you think questions can be used effectively to promote learning? How?

Levels of Questions

Questions may be categorized as being “narrow” or “broad.” Narrow questions usually ask for only factual recall or specific correct answers, whereas broad questions seldom can be answered with a single word. Moreover, broad questions do not have one correct answer and call on students to reach beyond simple memory. Broad questions prompt students to use the thinking process in formulating answers. Both narrow and broad questions contribute to the learning process. Too often, however, teachers rely too heavily on narrow questions when learning would be greatly enhanced through the use of both types of questions.

You must adapt the level of your questions to the purpose for which they are being asked. Consequently, ask questions that reveal whether students have gained specific knowledge, as well as questions that stimulate the thinking process. Because thinking can take place at several levels of sophistication, it is important that you as a teacher be able to classify—and ask—questions at these different levels.

Many effective classification systems have been developed for describing the levels of questions. Most of these systems are useful only to the extent that they can provide a framework for formulating questions at the desired level within a classroom environment. Consequently, some teachers may want to use only a two-level classification system, whereas others may want to use a more detailed system.

This discussion will focus on two systems that will be of most benefit to you as a classroom teacher. The first widely used system classifies questions as either convergent or divergent; the second categorizes questions according to the mental operation students use in answering them. These two classification systems are only two of the many systems to which you can refer in your classroom. When you prepare questions, however, evaluate them according to some classification system. By so doing, you will significantly improve the quality of your questions.

Convergent and Divergent Questions

One of the simplest and easiest ways of classifying questions is to determine whether they are convergent or divergent. Convergent questions allow for only a few right responses, whereas divergent questions allow for many correct responses.

Questions regarding concrete facts that have been learned and committed to memory are convergent. Most who, what, and where questions are also classified as convergent:
“What is 2 + 2?”

“Who was the 25th president of the United States?”

“What type of equation is \( x^2 + 3x + 3 = 0 \)?”

“Where is Stratford-upon-Avon located?”

“What was the major cause of the Great Depression?”

Convergent questions may also require students to recall and integrate or analyze information for determining one expected correct answer. Thus, the following questions would also be classified as convergent:

“Based on our discussion, what is the major cause of water pollution?”

“By combining the formulas for a triangle and a rectangle, what would be the formula for finding the area of a trapezoid?”

“Based on our definition of a noun, can you name three nouns?”

Most alternate-response questions, such as yes/no and true/false questions, would also be classified as convergent because the responses available to students are limited.
Conversely, questions calling for opinions, hypotheses, or evaluation are divergent in that many possible correct responses may be given:

“Why do you suppose we entered World War II?”
“What would be a good name for this painting?”
“Can you give me a sentence in which this word is used correctly?”
“Why is it important that we speak correctly?”

Divergent questions should be used frequently because they encourage broader responses and, therefore, are more likely to engage students in the learning process. They prompt students to think. Convergent questions, however, are equally important in that they deal with the background information needed in dealing with divergent questions. In the classroom, it is generally desirable to use convergent questions initially and then move toward divergent questions.

**Mental Operation Questions**

Based on the work of J. P. Guilford and Benjamin Bloom, Moore (2001) developed the Mental Operation system for classifying questions. Table 5.4 shows the relationship between the Mental Operation system, Guilford’s Structure of the Intellect model, and Bloom’s Taxonomy. The Mental Operation system is basically a four-category system that combines the cognitive and memory categories of the Guilford model into a single factual category. In addition, it combines four of Bloom’s categories of higher order thinking into two categories (see Chapter 3). The categories of questions that make up the Mental Operation model are factual, empirical, productive, and evaluative.

**Factual questions** test the student’s recall or recognition of information learned by rote. That is, it tests the student’s recall or recognition of information that has been committed to memory through some form of repetition or rehearsal. Some examples of factual questions are listed here:

“Who drilled the first oil well?”
“Joe, can you define the short story?”
“Which of these is the chemical formula for salt?”
“What is the formula for the volume of a cylinder?”

**Empirical questions** require that students integrate or analyze remembered or given information and supply a single, correct predictable answer. Indeed, the question may call for quite a lot of thinking, but, once thought out, the answer is usually a single, correct answer. Empirical questions are also narrow questions. Some examples of empirical questions include the following:

“Based on our study of California, what conditions led to its becoming a state?”
“Given that this circle has a radius of 5 centimeters, what is its area?”
“According to the information provided in the text, what is the most economical source of energy presently being used in the United States?”
“Which of these two forms of government is most like the British?”

Note that when answering these questions, students must recall learned information and carry out a mental activity with that information to arrive at the correct answer. There is, however, only one correct, predictable answer.
Productive questions do not have a single, correct answer, and it may be impossible to predict what the answer will be. Productive questions are open-ended and call for students to use their imaginations and think creatively. These questions ask students to develop a unique idea. Although the broad nature of productive questions prompts students to go beyond the simple recall of remembered information, students still need the basic related information to answer them. Following are some examples of productive questions:

“How can we improve our understanding and use of English?”

“What changes would we see in society if we were to eliminate unemployment in the world?”

“What are some possible solutions to the problem of world hunger?”

“What do you suppose the painter’s intent was in this painting?”

Finally, evaluative questions require that students put a value on something or make some kind of judgment. Evaluative questions are special cases of productive questions in that they, too, are often open-ended. They can, however, be more difficult to answer than are productive questions in that some internal or external criteria must be used; that is, some criteria must be established for making the judgment. The responses to evaluative questions can often be predicted or limited by the number of choices. For example, the question “Which of these two short stories is the best?” limits the responses to two, whereas the question “What is the best automobile made today?” allows a variety of responses. Other examples of evaluative questions are these:

“Who was our greatest scientist?”

“How would you rate our success in controlling government spending in this nation?”

“Do you think the author of the play developed the characters sufficiently?”

“Are Native Americans portrayed accurately in the movies?”

These questions call on students to make judgments based on internal criteria. When student responses are formally evaluated and bear directly on grades, however, you must establish evaluative criteria. The alternative is to rely on students’ internalized criteria, which you cannot evaluate, confirm, or refute. You can establish evaluative criteria for your evaluative questions by following them up with an empirical or a productive question that asks for the reasons behind the stated judgment or value or by making sure you develop and ask evaluative questions in a way that includes external criteria.

Use of the Mental Operation system of classifying questions (Table 5.5) should give you the needed framework for improving your questioning skill. You should be asking questions at all four levels of
the system, instead of at the factual level only, as many teachers do. To this end, you should plan and ask more productive and evaluative questions than is commonly done by teachers. These questions will give your students the opportunity to think and reason.

**Apply and Reflect 5.4**

Think back to your most recent class. What kinds of questions did your professor ask? What sort of thinking is required?

**Table 5.5 Levels of Classroom Questions**

<table>
<thead>
<tr>
<th>Category</th>
<th>Type of Thinking</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factual</td>
<td>Student simply recalls information</td>
<td>“Define…”</td>
</tr>
<tr>
<td></td>
<td>“Who was…”</td>
<td></td>
</tr>
<tr>
<td></td>
<td>“What did the text say…”</td>
<td></td>
</tr>
<tr>
<td>Empirical</td>
<td>Student integrates and analyzes given or recalled information</td>
<td>“Compare…”</td>
</tr>
<tr>
<td></td>
<td>“Explain in your own words…”</td>
<td></td>
</tr>
<tr>
<td></td>
<td>“Calculate the…”</td>
<td></td>
</tr>
<tr>
<td>Productive</td>
<td>Student thinks creatively and imaginatively and produces unique idea or response</td>
<td>“What will life be like…”</td>
</tr>
<tr>
<td></td>
<td>“What’s a good name for…”</td>
<td></td>
</tr>
<tr>
<td></td>
<td>“How could we…”</td>
<td></td>
</tr>
<tr>
<td>Evaluative</td>
<td>Student makes judgments or expresses values</td>
<td>“Which painting is best?”</td>
</tr>
<tr>
<td></td>
<td>“Why do you favor this…”</td>
<td></td>
</tr>
<tr>
<td></td>
<td>“Who is the best…”</td>
<td></td>
</tr>
</tbody>
</table>

**Types of Questions**

As an effective teacher, you must ask the right types of questions. That is, you must adapt the type of question to the specific purpose for which you are asking the question. For example, you may want to ask questions to determine the level of your students’ study, to increase student involvement and interaction, to increase clarification, or to stimulate student awareness. These purposes call for different types of questions.

**Focusing Questions**

Focusing questions, which may be factual, empirical, productive, or evaluative, are used to direct student attention. Focusing questions can determine what has been learned by students, can motivate and arouse student interest at the start of a lesson or during the lesson, can stimulate involvement and check understanding during a lesson, and can check students’ understanding of lesson material at the close of a lesson.

Was the assigned chapter read by students? No use discussing the material if it wasn’t read! Did the students learn and understand the material assigned? Can students apply the information? Focusing
questions can provide valuable information regarding these concerns. Ask factual questions to check on basic knowledge at the beginning of or during a lesson. Use empirical questions to have students figure out correct solutions for problems related to assignments or issues being discussed. Pose productive and evaluative questions for motivating and stimulating thinking and interest in the topic.

When opening a lesson or discussion with a question, it is good practice to use a productive or evaluative question that focuses on the upcoming topic. The question should be such that it arouses students’ interest and thinking:

“What do you suppose would happen if I were to drop these two objects at the same time?”

“How could we test the hypothesis suggested by the results?”

“Should we do away with the income tax in the United States?”

These questions should then be followed with questions at all levels to develop understanding and to maintain interest.

**Prompting Questions**

What should you do when a student fails to answer a question? Most teachers answer the question themselves or move on to another student. This technique will get your question answered, but it fails to involve the original student in the discussion. Rather, it leaves that student with a sense of failure, which, more than likely, will result in even less participation in the future. A better way to address this problem is to use a prompting question as a follow-up to the unanswered question.

**Prompting questions** use clues that help students answer questions or correct initially inaccurate responses. Thus, a prompting question is usually a rewording of the original question—with clues added. Consider this example of a prompting questioning sequence:

**Teacher:** What is \( x^2 \) times \( x^3 \), Pat?

**Pat:** I don’t know.
Teacher: Well, let’s see if we can figure it out. What do we do with the exponents when we multiply variables?
Pat: Multiply?
Teacher: No.
Pat: Add!
Teacher: Right! So, if we add 2 + 3, what will our answer be?
Pat: [Pause] 5.
Teacher: So what would $x^2$ times $x^3$ be?
Pat: $x^5$.
Teacher: Very good, Pat.

Your use of prompting questions with students should lead to a sense of success when they finally answer correctly. Indeed, the successes could even act as reinforcers to students, which result in even greater participation.

**Probing Questions**

Up to this point I have discussed focusing questions and prompting questions. The former can be used for determining the level of learning and understanding and for increasing student participation, whereas the latter can be used when no response to a question is forthcoming. Another situation with which a teacher must contend occurs when the student’s response is incorrect or correct yet insufficient because it lacks depth. In such cases, you should have the student correct the mistake or ask that he or she supply the additional needed information. This is accomplished through the use of probing questions.

**Probing questions** aim at correcting, improving, or expanding a student’s initial response. They compel the student to think more thoroughly about the initial response. Probing questions can be used for correcting an initial response, eliciting clarification, developing critical awareness, or refo-cusing a response.

You may want to ask a probing question for the purpose of clarification. Students sometimes give flimsily thought-out answers or give only half-answers to questions. These responses should be followed up with probing questions that force the student to think more thoroughly and urge him or her to firm up the response. Here are examples of such probing questions:

“What are you saying?”
“What do you mean by the terms . . . ?”
“Would you say that in another way?”
“Could you elaborate on those two points?”
“Can you explain that point more fully? It lacks clarity.”

You sometimes may want students to justify their answers; that is, you may want to foster their critical awareness. This also can be accomplished with probing questions. Probing questions that could be used to develop critical awareness include these:

“What is your factual basis for these beliefs?”
“Why do you believe that?”
“What are you assuming when you make that statement?”
"What are your reasons for those assumptions?"
"Are you sure there isn't more evidence to support that issue?"

Finally, you may want to probe to refocus a correct, satisfactory student response to a related issue. Examples of questions that could serve this function follow:

"Let's look at your answer with respect to this new information."
"Can you relate your answer to yesterday's discussion?"
"What implications does this conclusion have for . . . ?"
"Apply these solutions to . . . ?"
"Can you relate Mary's earlier answer to this issue?"

The different types of questions will be invaluable to you as a teaching tool. When used effectively, they can increase student participation and involve students in their own learning. You should practice these different questions and become proficient in their use.

**Questioning Techniques**

Certain techniques associated with asking questions tend to increase the quantity of and enhance the quality of the students' responses. Let's now look at four such techniques.

**Redirecting**

Redirecting is a technique that is useful for increasing the amount of student participation. It allows you to draw students into a discussion by asking them to respond to a question in light of a previous response from another student. Because this technique requires several correct responses to a single question, the question asked must be divergent, productive, or evaluative. The following is an example of how you might redirect a question:

Teacher: We have now studied the administrations of several presidents. Which president do you think made the greatest contribution?

[Pause. Several hands go up.] Cindi?

Cindi: Lincoln.

Teacher: Jeff?

Jeff: Washington.

Teacher: Mary, what is your opinion?

Mary: John Kennedy.

You should note that, if you are using redirecting correctly, you do not react to the student responses. You simply redirect the question to another student. Thus, it is hoped that this technique will lead to greater student participation and involvement and, consequently, to greater learning and increased interest.
The redirecting technique can also be used effectively with students who are nonvolunteers. You should try to involve these nonvolunteers as much as possible because, as noted earlier, participation enhances learning and stimulates interest.

It is important to remember, however, that nonvolunteers should never be forced to answer; rather, they should be given the opportunity to contribute to the discussion. In addition, you should give nonvolunteers ample time to consider a response. This time needed for students in considering their responses to questions is referred to as wait time. Let’s now look at the appropriate use of wait time in questioning.

**Wait Time**

Students need time for thinking and pondering the responses they will give to your questions. Research by Rowe (1974a, 1974b, 1978), however, has shown that teachers on the average wait only about 1 second for students to give an answer. Rowe’s research also revealed that, when teachers learned to increase wait time from 3 to 5 seconds, the following results occurred:

1. Student response time increased.
2. Failure to respond tended to decrease.
3. Students asked more questions.
4. Unsolicited responses tended to increase.
5. Student confidence increased.

Basically, there are two types of wait time. *Wait time 1* is the time provided for the first student response to a question. *Wait time 2* is the total time a teacher waits for all students to respond to the same question or for students to respond to each other’s response to a question. Wait time 2 may involve several minutes. If you are to engage students more in your lessons, you must learn to increase your wait time tolerance so students have more opportunities to think and to ponder their answers.

The typical pattern of questioning in the average classroom can be depicted as follows:

Teacher ————————> Student A
Teacher ————————> Student B
Teacher ————————> Student C

This pattern represents nothing more than a question-and-answer period. The teacher asks a question of a student, the student answers, the teacher moves to the next student and asks a question, the student answers, the teacher moves to the next student, and so on. Students often receive little time for thinking and expressing themselves and usually no time for reacting to each other’s comments. In fact, most of the questions are typically at the lower level. Appropriate use of questioning techniques, higher level questions, and wait time can and should change this sequence to the following:
This pattern facilitates student discussion, welcomes extended responses, and provides opportunities for commenting on other students’ questions and for asking questions. There is real involvement! Indeed, you will find that extending the time you wait after a question from 3 to 5 seconds—and giving students time to react to your questions and other students’ responses—is well worth the added effort.

**Halting Time**

When presenting complex material, you need to learn to halt in what you are saying and give students time to think. This pause is referred to as **halting time**. No questions are asked, and no student comments are elicited. In using the halting time technique, you present some complex material or complicated directions and then stop momentarily so students have time to consider the information or carry out the directions. During this pause, you visually check with the class to see whether they are with you and understand what you are trying to communicate. If your observations are positive, you continue. If students appear to be confused, you may want to redo the explanation or directions.

**Reinforcement**

Once you have asked a question and have received an acceptable response, you must react to the response. Should you merely accept the response without comment and continue with the lesson or should you offer praise for a job well done? Your **reinforcement**—that is, your pattern of positive reaction—will have a powerful effect on the direction of the interaction in the classroom.

Rewards and praise often encourage students to participate. Phrases such as “Fine answer,” “Great,” “What an outstanding idea,” and “Super” may be used when rewarding students’ correct answers.

Reinforcement is often a good idea, but the too-frequent application of reinforcement can negate the benefits of using wait time. If reinforcement is given too early in an answering sequence, other students may decide not to respond because they fear their answer could not match an earlier response. After all, didn’t you say the earlier response was “great”? Rather than give reinforcement early in the questioning-answering sequence, you should allow as many students as possible to respond to the question, then reinforce all of them for their contributions. You can always return to the best answer for further comment.

**APPLY AND REFLECT 5.6**

You can keep students focused on your lesson through the use of the redirecting technique, wait time, halting time, and reinforcement. Have your past teachers used these techniques? Were they effective? Why or why not?

**Tips on Questioning**

Asking good questions is an art. It is an art, however, that can be mastered with practice. The improper use of questioning can negatively affect learning. Teachers who strive for higher level questions, for example, may lose interest in the just as important bread-and-butter memory questions. They may even tend to cater to the capacities of superior students. Let’s now look at some questioning tips that may prove helpful in avoiding questioning pitfalls.

Questions should be clear, and you should ask the question before designating who is to answer. Ask the question, wait for the class to think about it, and then specify an individual to answer. As usual, there are exceptions to this rule. When you call on an inattentive student, it is often wise to designate the individual first, so that the student is sure to hear the question. Similarly, you should call the name first of slow or shy students so that they can prepare themselves.
Distribute your questions about the class fairly. Avoid directing all questions to a selective few bright students. Also avoid using a mechanical system for asking questions because students soon catch on to such systems—such as going by alphabetical order or row by row—and they will pay attention only when it is their turn.

Do not ask more than one question at a time. Asking too many questions at once often confuses students. Simultaneous questions permit no time to think, and when several questions are asked, students are not sure which question to answer first.

Do not ask too many questions. Often, you need to establish a knowledge base before initiating a questioning sequence. This is especially true when the questions require thinking and reasoning.

Ask questions at all ability levels in the class. Some questions should be easy, whereas others should be more difficult. Also, use questions to help students modify their inaccurate responses. Use prompting and probing questions to help students think more thoroughly about their responses. This approach will increase involvement, will develop better thinking skills, and will reinforce student successes.

Finally, listen carefully to student responses. Wait at least 3 seconds following a student response. This allows the student time for making further comments and gives other students time to react to the initial student’s response.

The key to the effective use of exposition with interaction is good questioning. Therefore, you must refine your ability to think, plan, and ask questions throughout your lessons. Let’s now look at some methods that contain many of the features of the exposition and exposition with interaction strategies.

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**APPLY AND REFLECT 5.7**

Do you consider effective questioning an art? What are your strengths and weaknesses as a questioner? What types and levels of questions will be the most useful to you as a classroom teacher?

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**Lecture Recitation**

**Lecture recitation** is an instructional method in which the teacher presents information by telling and explaining and follows up with question-and-answer sessions at periodical intervals. Thus, questions are used for summarizing the content of the lecture and for helping students consolidate and organize the presented information.

The lecture recitation method is often efficient in terms of time, flexibility, and learning while actively involving students in the lesson. Its basic structure of teacher talk/teacher question/student response/teacher talk makes questioning the key component to the method. Moreover, this method is highly adaptable to a large variety of topics and frequently is used as a companion to the lecture method or to the study of a textbook. Indeed, it is a form of recitation.

A hybrid form of the lecture recitation method, in which questions are interspersed throughout the lecture, has proven to be the most popular among classroom teachers (Goodlad, 1984). When proper lecturing is executed and when questions are strategically used, this method is an effective and efficient way of teaching content. That is, the questions can and should be designed to provide feedback on understanding, to add variety to the lecture, and to maintain the students’ attention. Moreover, questions from students can also help clarify the content and shed light on how well the lecture is being understood.

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**APPLY AND REFLECT 5.8**

How can being asked a question be viewed as punishment for some students and reward for others?
Textbook Recitation

The textbook recitation method is relatively simple: You assign students content to read and study in their textbook and then question them on what they have read and studied. Textbook recitation is an effective technique for teaching basic information simply because students are often motivated to read and study the assignment in anticipation of being called on to recite the information. However, this method does not foster true understanding and the application of the assigned content.

On the other hand, textbook recitation has the added advantages of giving students feedback on the accuracy of the content learned and of providing them with the opportunity to learn from the replies of fellow students. Indeed, these ends can be accomplished by planning higher level questions in advance, with an emphasis on questioning sequences that will develop thinking and reasoning skills.

The various direct instruction models have strengths and weaknesses. Complete Web Link 5.1: Direct Instruction to explore some of these strengths and weaknesses.

You must make sure a knowledge base has been established prior to questioning. How can this knowledge base be established?

The various direct instruction models have strengths and weaknesses. Complete Web Link 5.1: Direct Instruction to explore some of these strengths and weaknesses.

WEB LINK 5.1 Direct Instruction

Choose one of the direct instruction models found in this section and do an Internet search relative to the strengths and weaknesses of the model. Share the results with your class.

REFLECTIONS ON TEACHER PRACTICE 5.2

1. Why should reading be an important part of the curriculum in all subject areas?

2. How can students be motivated to read?

I go to the public library every three weeks and check out high interest picture books that center around whatever I am currently teaching, picture books that are nonfiction, for the most part, and appropriate for middle school students. Lots of DK books, Science Encyclopedias, all-in-one volumes, and Seymour books. They sit in a laundry basket at the front of my room as resources to read.

Here’s my one tip that I have used and found wildly successful. Every once in a while, we do a science “read around day.” On that day, I take those books from the basket and put them in the middle of the lab tables. When I say, “go!” They have to select a book and read until I say stop. Usually it’s about 3–4 minutes. Then they send their book to the next person. This continues until all four people have read the books at that table.

They don’t have to start at the beginning; they can just look at pictures, or use the index to find something that interests them. From here each table interviews each person on what they learned, or what they liked. From here we switch that pile of books with another table and continue with the process.

They love it, and they hate it. They want to read more of at least one book and they can’t because it has rotated around. Well, let me tell you, books fly out of the basket in extra time before class, or if they finish early. The afterglow only last a couple of days, but it works. And sometimes, oh how I love those sometimes, someone will ask to have a library pass so they can go see if that book is in our library or if the media specialist can help them interlibrary loan it.

That’s what I’ve tried in science. Now math, well, that’s another story. I’m still working on it—mostly working to find read-alouds beyond the standards.

—MARSHA, middle-level teacher

ON YOUR OWN 5.3  Reflections on Teacher Practice

Read and reflect on the viewpoints expressed in Motivating Students to Read. Log on to the Web-based student study site at http://www.sagepub.com/eis2study and react to the related activities.

This concludes our discussion of various direct teaching methods. Apply the concepts developed in this chapter in Expansion Activity: Direct Instruction Application.

Table 5.6 gives a review of the direct teaching methods. Review the table and complete Review and Reflective Exercise 5.2.

EXPANSION ACTIVITY 5.2  Direct Instruction Application

Teachers work hard and spend a lot of time and effort developing plans, activities, and instructional resources to maximize learning. However, sometimes learning is limited. Create a two-column chart of the direct instructional strategies covered in Chapter 5 and indicate your feelings as to the value of each strategy at the grade level you expect to teach. Use the following three categories to evaluate each strategy for your chart: (1) appropriate and useful, (2) limited usefulness, and (3) not appropriate and not useful.

<table>
<thead>
<tr>
<th>Method</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture Recitation</td>
<td>Teacher presents information and follows up with questions</td>
</tr>
<tr>
<td>Textbook Recitation</td>
<td>Students are assigned content to read and study and are later questioned over information</td>
</tr>
</tbody>
</table>

TABLE 5.6  Exposition With Interaction Teaching

REVIEW AND REFLECTIVE EXERCISE 5.2  Describe the effective use of questioning in the classroom.

REVIEW
- Describe the exposition with interaction instructional method of teaching. What are the strengths and weaknesses of this instructional approach?
- Why is questioning an art?
- Describe two questioning classification systems.
- Describe the different types of questions.

REFLECTION
- Do you consider yourself a good questioner? How can you improve your skills?
- Should teachers use a question classification system? Why? What system do you plan to use in the area you expect to teach?
**SUMMARY**

There are two basic approaches to teaching: direct and indirect.

**Direct Teaching**
- Direct teaching is a teacher-centered skill-building model.

**Exposition Teaching**
- Exposition teaching offers an effective way to convey a great deal of information in a short period of time.

**Exposition With Interaction Teaching**
- Exposition with interaction teaching is often more effective than exposition teaching.
- The key to exposition with interaction teaching is questioning. Asking good questions is an art that is essential to the lecture recitation and textbook recitation methods.
- The recall of information requires the use of narrow questions (convergent) while the desire to stimulate thinking and reasoning calls for the use of broad questions (divergent).
- The Mental Operation question system categorized questions as factual, empirical, productive, or evaluative.
- Focusing, prompting, and probing questions can be used to arouse interest and increase involvement.
- Redirecting questions, using wait time and halting time, and using reinforcement can enhance questioning skills.

**DISCUSSION QUESTIONS AND ACTIVITIES**

1. **Direct instruction.** What aspects of direct instruction might explain its success?
2. **Strategy selection.** You have been assigned a new class to teach. This class consists largely of slow learners. The class is restless, not interested, and hard to manage. What teaching strategies and methods would be best to use with this class if it were the following? Give a valid rationale for your selection.
   a. A 3rd-grade class
   b. A 6th-grade middle school class
   c. A 10th-grade social studies class
3. **The lecture method.** When would it be appropriate to use the lecture method? Consider objectives and purpose. How would one plan an effective lecture? Consider motivation, length, aids, clarity, and interest. How could you tell whether a lecture has been successful?
4. **Preparing questions.** Prepare examples for each level within the following question categories.
   a. Convergent and divergent
   b. Mental Operation system
5. **Textbook questions.** Obtain the teacher's edition of a textbook for a subject you expect to teach. Analyze the questions contained in the text. What levels and types of questions are most frequently suggested?

**TECHNOLOGY AND EDUCATION**

DECONSTRUCTING THE STANDARDS

Chapter 5 content addresses topics related to INTASC Standards 1, 2, 3, 4, 6, and 7.

- INTASC Standard 1 states: Knowledge of Subject Matter: The teacher understands the central concepts, tools of inquiry, and structures of the subject being taught and can create learning experiences that make these aspects of subject matter meaningful for students.

- INTASC Standard 2 states: Knowledge of Human Development and Learning: The teacher understands how children learn and develop and can provide learning opportunities that support their intellectual, social, and personal development.

- INTASC Standard 3 states: Adapting Instruction for Individual Needs: The teacher understands how students differ in their approaches to learning and creates instructional opportunities that are adapted to diverse learners.

- INTASC Standard 4 states: Multiple Instructional Strategies: The teacher uses various instructional strategies to encourage students’ development of critical thinking, problem solving, and performance skills.

- INTASC Standard 6 states: Communication Skills: The teacher uses knowledge of effective verbal, nonverbal, and media communication techniques to foster active inquiry, collaboration, and supportive interaction in the classroom.

- INTASC Standard 7 states: Instructional Planning Skills: The teacher plans instruction based on knowledge of subject matter, students, the community, and curriculum goals.

For each of these six standards, write your response to the following:

- Which part(s) of each standard does this chapter address?
- How does this chapter address this standard?
- How will the concepts in this chapter help you apply this standard as a teacher?

PRAXIS CONNECTION

Log on to the Web-based student study site at http://www.sagepub.com/eis2study. Access the Praxis II: Principles of Learning and Teaching assessments and/or state-related exams and complete the Chapter 5 test preparation exercises.

PORTFOLIO CONNECTION

Log on to the Web-based student study site at http://www.sagepub.com/eis2study. Access the Portfolio Connection. Complete the Chapter 5 portfolio link to INTASC activities.

CONNECTION WITH THE FIELD

1. Questioning in the classroom. Attend a class in a public school or college classroom. Keep a tally of the levels of questions, as well as types of questions, used by the instructor. Did you see any patterns? What other questioning techniques did you observe? Were they successful? Why, or why not?

2. Teaching. Prepare and teach a minilesson using a direct methods approach. Use the miniteaching guidelines and forms in Appendix A to plan and analyze your minilesson.

3. Teaching analysis. Make a videotape of your miniteaching lesson; then critically analyze it with your peers.