CHAPTER 6: EDUCATIONAL PSYCHOLOGY: The Effective Lesson



Paul Eggen and Don Kauchak Educational Psychology: Windows on Classrooms, Eighth Edition

Chapter Outline

- What Is Direct Instruction?
- How Is a Direct Instruction Lesson Taught?
- How Does Research on Direct Instruction Methods Inform Teaching?
- How Do Students Learn and Transfer Concepts?
- How Are Discussions Used in Instruction?





Educational Psychology: Windows on Classrooms, Eighth Edition

Learning Outcomes

Learning Outcomes

At the end of this chapter, you should be able to:

- Define direct instruction and when it is appropriate to use
- Describe how a direct instruction lesson is taught
- Discuss what research on direct instruction suggests for classroom practice
- Describe how to best teach for transfer of learning
- Identify instructional situations in which discussion is most useful



Billy E. Barnes/PhotoEdit



Paul Eggen and Don Kauchak Educational Psychology: Windows on Classrooms, Eighth Edition



PEARSON

Paul Eggen and Don Kauchak Educational Psychology: Windows on Classrooms, Eighth Edition



PEARSON

Paul Eggen and Don Kauchak Educational Psychology: Windows on Classrooms, Eighth Edition



What Is Direct Instruction?

 The term direct instruction is used to describe lessons in which you transmit information directly to students, structuring class time to reach a clearly defined set of objectives as efficiently as possible



Paul Eggen and Don Kauchak Educational Psychology: Windows on Classrooms, Eighth Edition



How Is a Direct Instruction Lesson Taught?

- 1. State learning objectives and orient(direct) students to the lesson.
- Tell students what they will be learning and what performance will be expected of them. Whet students' appetites for the lesson by informing them how interesting, important, or personally relevant it will be to them.





Paul Eggen and Don Kauchak Educational Psychology: Windows on Classrooms, Eighth Edition



- 1. State learning objectives and orient students to the lesson
- The first step in presenting a lesson is planning it in such a way that the reasons for teaching and learning the lesson are clear. What do you want students to know or be able to do at the end of the lesson? Setting out objectives at the beginning of the lesson is an essential step in providing a framework(skeleton) into which information, instructional materials, and learning activities will fit.



Paul Eggen and Don Kauchak Educational Psychology: Windows on Classrooms, Eighth Edition



- 1. State learning objectives and orient students to the lesson
- At the beginning of a lesson, you need to establish a positive mental set, or attitude of readiness, in students: "I'm ready to get down to work. I'm eager to learn the important information or skills the teacher is about to present, and I have a rough idea of what we will be learning." This mental set can be established in many ways





Paul Eggen and Don Kauchak Educational Psychology: Windows on Classrooms, Eighth Edition



How Is a Direct Instruction Lesson Taught?

- 2. Review prerequisites.
- Go over any skills or concepts students need in order to understand the lesson.
- for the next major task in a lesson, you need to ensure that students have mastered prerequisite skills and to link information that is already in their minds to the information you are about to present. If today's lesson is a continuation of yesterday's and you are reasonably sure that students understood yesterday's lesson, then the review might simply remind them about the earlier lesson and ask a few quick questions before beginning the new one.



Paul Eggen and Don Kauchak Educational Psychology: Windows on Classrooms, Eighth Edition



2. Review prerequisites.

- For instance, you might say, "Yesterday we learned how to add the suffix -ed to a word ending in y. Who will tell us how this is done?" As today's lesson—adding other suffixes to words ending in y—is a direct continuation of yesterday's, this brief reminder is adequate.
- Worry Worried





Paul Eggen and Don Kauchak Educational Psychology: Windows on Classrooms, Eighth Edition



How Is a Direct Instruction Lesson Taught? 3. Present new material

- Teach the lesson, presenting information, giving examples, demonstrating concepts, and so on.
- Here begins the main body of the lesson, the point at which you present new information or skills.
- LESSON STRUCTURE Lessons should be logically organized
- LESSON EMPHASIS In addition to making clear the organization of a lesson by noting when the next subtopic is being introduced, instructionally effective teachers give clear indications about the most important elements of the lesson by saying, for example, "It is particularly important to note that"



Paul Eggen and Don Kauchak Educational Psychology: Windows on Classrooms, Eighth Edition



3. Present new material

- LESSON CLARITY One consistent feature of effective lessons is clarity—the use of direct, simple, and well-organized language to present concepts
- EXPLANATIONS Effective explanations are at the core of effective teaching
- WORKED EXAMPLES Worked examples are an established strategy for teaching certain kinds of problem solving, especially in mathematics. For example, you might pose a problem and then work it out on a chalkboard or overhead, explaining your thinking at each step.



Paul Eggen and Don Kauchak Educational Psychology: Windows on Classrooms, Eighth Edition



By working through examples with students, you can demonstrate problem-solving and decision making







Paul Eggen and Don Kauchak Educational Psychology: Windows on Classrooms, Eighth Edition



3. Present new material

- DEMONSTRATIONS, MODELS, AND ILLUSTRATIONS
 Cognitive theorists emphasize the importance of students' seeing and, when appropriate, having hands-on experience with concepts and skills. Learning by doing, learning by practicing
- Visual representations are maintained in long-term memory far more readily than information that is only heard. Showing, rather than simply telling, is particularly essential for children who are acquiring(learning) English.



Paul Eggen and Don Kauchak Educational Psychology: Windows on Classrooms, Eighth Edition



showing some pictures or videos is more useful rather than just talking about Narwhals







Paul Eggen and Don Kauchak Educational Psychology: Windows on Classrooms, Eighth Edition



3. Present new material

- EMBEDDED VIDEO Video, television, and DVD have long been used in education. However, a new use is showing particular promise—video or DVD material that is embedded in on-screen text or class lessons used to illustrate key concepts. Research on embedded video finds that it helps children learn and retain information to the degree that it is easy to understand and it clearly links to the main content.
- For example, two year-long studies by Chambers and colleagues found that adding brief animations and puppet videos to illustrate letter sounds and sound blending significantly increased first-graders' progress in reading



Paul Eggen and Don Kauchak Educational Psychology: Windows on Classrooms, Eighth Edition



3. Present new material

- MAINTAINING ATTENTION Straight, dry lectures can be boring, and bored students soon stop paying attention to even the most carefully crafted lesson. For this reason you should introduce variety, activity, or humor to enliven(cheer up) the lecture and maintain student attention.
- For example, the use of humor has been found to increase student achievement, and illustrating a lecture with easily understood graphics can help to hold students' attention
- CONTENT COVERAGE One of the most important factors in effective teaching is the amount of content covered. In general, students whose teachers cover more material learn more than other students do

Paul Eggen and Don Kauchak Educational Psychology: Windows on Classrooms, Eighth Edition

PEARSON

How Is a Direct Instruction Lesson Taught? 4. Conduct learning probes

- Pose(ask) questions to students to assess their level of understanding and correct their misconceptions.
- effective teaching requires you to be constantly aware of the effects of your instruction.
- The term learning probe refers to any of a variety of ways of asking for brief student responses to lesson content. Learning probes give you feedback on students' levels of understanding and allow students to try out their understanding of a new idea to find out whether they have it right



Paul Eggen and Don Kauchak Educational Psychology: Windows on Classrooms, Eighth Edition



4. Conduct learning probes

- CHECKS FOR UNDERSTANDING Whether the response to the learning probe is written, physical, or oral, the purpose of the probe(investigate or ask) is checking for understanding
- QUESTIONS Questions to students in the course of the lesson serve many purposes. You can use questions as Socrates used them, to prompt(encourage) students to take the next mental step—for example, "Now that we've learned that heating a gas makes it expand, what do you suppose would happen if we cool a gas?" You can also use questions to encourage students to think further about information they learned previously or to get a discussion started—for example, "We've learned that if we boil water, it becomes water vapor. Now, water vapor is a colorless, odorless(smell), invisible gas. In that case, why do you suppose we can see steam coming out of a tea kettle?"

PEARSON

Paul Eggen and Don Kauchak Educational Psychology: Windows on Classrooms, Eighth Edition



4. Conduct learning probes

- WAIT TIME One issue related to questioning that has received much research attention is wait time, the length of time you wait for a student to answer a question before giving the answer or going on to another student. Waiting approximately 3 seconds after asking a student a question obtains better learning results than giving up more rapidly
- CALLING ORDER In classroom questioning, calling order is a concern. The order in which students are called on by the teacher to answer questions during the course of a lesson.
- ALL-PUPIL RESPONSE Many teachers ask students for allpupil responses when there is only one possible correct answer. For example, you might say, "Class, in the words listed on the board [write, wring, wrong], what sound does the wr make?" To which the class responds together, "Rrrr!"



Paul Eggen and Don Kauchak Educational Psychology: Windows on Classrooms, Eighth Edition

How Is a Direct Instruction Lesson Taught? 5. Provide independent practice.

- Give students an opportunity to practice new skills or use new information on their own.
- Component of instruction in which students work by themselves to demonstrate and rehearse(duplicate) new knowledge.
- The term independent practice refers to work students do in class on their own to practice or express newly learned skills or knowledge. For example, after hearing a lesson on solving equations in algebra, students need an opportunity to work several equations on their own without interruptions, both to crystallize(become clear) their new knowledge and to help you assess their knowledge. Practice is an essential step in the process of transferring new information in working memory to long-term memory



Paul Eggen and Don Kauchak Educational Psychology: Windows on Classrooms, Eighth Edition



5. Provide independent practice.

- SEATWORK(seatwork that students are assigned to do independently during class)
- Assign homework to provide distributed(in time) practice on the new material. In later lessons, review material and provide practice opportunities to increase the chances that students will remember what they learned and also be able to apply it in different circumstances.



Paul Eggen and Don Kauchak Educational Psychology: Windows on Classrooms, Eighth Edition

6. Assess performance and provide feedback.

 Review independent practice work or give a quiz. Give feedback on correct answers, and reteach skills if necessary.





Paul Eggen and Don Kauchak Educational Psychology: Windows on Classrooms, Eighth Edition

7. Provide distributed practice and review.

- Practice or review spaced out over time increases retention of many kinds of knowledge. This has several implications for teaching. First, it implies that reviewing and recapitulating(repeating) important information from earlier lessons enhances learning. Students particularly need to review important material at long intervals (e.g., monthly) to maintain previous skills.
- In addition, you should assign homework in most subjects, especially at the secondary level. Homework gives students a chance to practice skills learned in one setting at one time (school) in another setting at a different time (home)



Paul Eggen and Don Kauchak Educational Psychology: Windows on Classrooms, Eighth Edition

How Do Students Learn and Transfer Concepts?

- A very large proportion of all lessons focus on teaching concepts. A concept is an abstract idea that is generalized from specific examples. For example, a red ball, a red pencil, and a red chair all illustrate the simple concept "red." A green book is not an instance of the concept "red." If you were shown the red ball, pencil, and chair and asked to say what they have in common, you would produce the concept "red objects." If the green book were also included, you would have to fall back on the much broader concept "objects."
- Of course, many concepts are far more complex and less well defined than the concept "red." For example, the concept "justice" is one that people might spend a lifetime trying to understand.



Paul Eggen and Don Kauchak Educational Psychology: Windows on Classrooms, Eighth Edition



Concept Learning and Teaching

- Concepts are generally learned in one of two ways. Most concepts that we learn outside of school we learn by observation. For example, a child learns the concept "car" by hearing certain vehicles referred to as "cars." Initially, the child might include SUVs or motorcycles under the concept "car," but as time goes on, the concept is refined until the child can clearly differentiate "car" from "noncar."
- Similarly, the child learns the more difficult concepts "naughty," "clean," and "fun" by observation and experience. Other concepts are typically learned by definition.





Educational Psychology: Windows on Classrooms, Eighth Edition



Concept Learning and Teaching

 For example, it is very difficult to learn the concepts "aunt" or "uncle" by observation alone. One could observe hundreds of "aunts" and "nonaunts" without deriving a clear concept of "aunt." In this case the concept is best learned by definition: To be an aunt, one must be a female whose brother or sister (or brother- or sister-in-law) has children.





Paul Eggen and Don Kauchak Educational Psychology: Windows on Classrooms, Eighth Edition



Teaching for Transfer of Learning

- REAL-LIFE LEARNING Transfer of learning from one situation to another depends on the degree to which the information or skills were learned in the original situation and on the degree of similarity between the situation in which the skill or concept was learned and the situation to which it is to be applied
- INITIAL LEARNING AND UNDERSTANDING Not surprisingly, one of the most important factors in transfer of a skill or concept from one situation to another is how well the skill or concept was learned in the first place. However, it also matters a great deal how well students understood the material and to what degree it was taught in a meaningful way. In other words, material that is memorized by rote is unlikely to transfer to new situations no matter how thoroughly it was mastered



Paul Eggen and Don Kauchak Educational Psychology: Windows on Classrooms, Eighth Edition



How Are Discussions Used in Instruction?

 You can use discussions as part of instruction for many reasons. Discussions lend themselves to controversial(not clear) topics, to questions for which there may be many right answers, and to affective objectives.





Paul Eggen and Don Kauchak Educational Psychology: Windows on Classrooms, Eighth Edition



Subjective and Controversial Topics

 Questions in many subjects do not have simple answers. There may be one right answer to an algebra problem but is there one right set of factors that explains what caused the Civil War? How were Shakespeare's writings influenced by the politics of his day? Should genetic engineering be banned as a danger to world health? These and many other questions have no clear-cut answers, so it is important for students to discuss and understand these issues instead of simply receiving and rehearsing(repeating) information or skills.



Paul Eggen and Don Kauchak Educational Psychology: Windows on Classrooms, Eighth Edition



Whole-Class Discussions

- Discussions take two principal forms. In one, the entire class discusses an issue, with the teacher as moderator (Connolly & Smith, 2002; Gunter et al., 2003).
- In the other, students form small groups to examine a topic. A whole-class discussion differs from a usual lesson because the teacher plays a less dominant role. You may guide the discussion and help the class avoid dead ends but should encourage the students to come up with their own ideas



Paul Eggen and Don Kauchak Educational Psychology: Windows on Classrooms, Eighth Edition



Small-Group Discussions

 In a small-group discussion, students work in four- to six-member groups to discuss a particular topic, and the teacher moves from group to group, aiding the discussion (Cook & Tashlik, 2004; Spiegel, 2005). Because small-group discussions require that students work independently of the teacher most of the time, young or poorly organized students need a great deal of preparation and, in fact, might not be able to benefit from them at all. However, most students at or above the fourth-grade level can profit from small-group discussions.



Paul Eggen and Don Kauchak Educational Psychology: Windows on Classrooms, Eighth Edition

Chapter Summary

- What Is Direct Instruction?
- Direct instruction is a teaching approach that emphasizes teacher control of most classroom events and the presentation of structured lessons. Direct instruction programs call for active teaching; clear lesson organization; step-by-step progression between subtopics; and the use of many examples, demonstrations, and visual prompts.



Paul Eggen and Don Kauchak Educational Psychology: Windows on Classrooms, Eighth Edition



How Is a Direct Instruction Lesson Taught?

- The first part of a lesson is stating learning objectives and orienting students to the lesson. The principal task is to establish both a mental set, so that students are ready to work and learn, and a "road map," so that students know where the lesson is going.
- Part two of a lesson is to review prerequisites or pretest to ensure that students have mastered required knowledge and skills. The review might function as an advance organizer for the lesson.
- Part three involves presenting the new material in an organized way, providing explanations and demonstrations and maintaining attention.
- Part four, conducting learning probes, elicits(discover) students' responses to lesson content. This practice gives you feedback and lets students test their ideas. Questioning techniques are important, including the uses of wait time and calling order.

PEARSON

Paul Eggen and Don Kauchak Educational Psychology: Windows on Classrooms, Eighth Edition



How Is a Direct Instruction Lesson Taught?

- Part five of a lesson is independent practice, or seatwork, in which students apply their new skill. Research shows that independent practice should be given as short assignments with clear instructions and no interruptions and that it should be given only when students can do the assignments. You should monitor(observe) work, collect it, and include it in assessments.
- Part six is to assess performance and provide feedback. Every lesson should include an assessment of student mastery of the lesson objectives.
- Part seven of a lesson is to provide distributed(weekly, montly) practice through homework and review. Information is retained better when practice is spaced out over a period of time.

PEARSON

Paul Eggen and Don Kauchak Educational Psychology: Windows on Classrooms, Eighth Edition



How Do Students Learn and Transfer Concepts?

- Students learn concepts through observation and definition. Concepts are taught through examples and nonexamples and through the rule– example–rule approach, in which you first state a definition, then give examples, and finally restate the definition.
- Students first transfer their learning to similar situations and then must be taught to transfer concepts to different contexts and real-life situations. Material memorized by rote is unlikely to transfer.





Paul Eggen and Don Kauchak Educational Psychology: Windows on Classrooms, Eighth Edition



How Are Discussions Used in Instruction?

- In whole-group discussion the teacher plays a less dominant role than in a regular lesson. Students need an adequate knowledge base before beginning a discussion.
- In smallgroup discussion, each group should have a leader and a specific focus.





Paul Eggen and Don Kauchak Educational Psychology: Windows on Classrooms, Eighth Edition