

Chapter 1 - Applying Psychology to Teaching

Multiple Choice

1. The primary focus of educational psychology is to understand how
- a. students develop physically, cognitively, and emotionally over time.
 - b. different factors influence learning in classroom settings.
 - c. problem-solving tactics and self-esteem influence psychosocial well-being.
 - d. achievement test scores relate to general aptitude.

ANSWER: b

The following quote, "to study what people think and do as they teach and learn in a particular environment where education and training are intended to take place" best describes the primary focus of

2. The following quote, "to study what people think and do as they teach and learn in a particular environment"
- a. social scientists.
 - b. board of education members.
 - c. school administrators.
 - d. educational psychologists.

ANSWER: d

3. Teaching children or adolescents is challenging because it requires
- a. flexible decision making and a working knowledge of the topics being discussed.
 - b. the development of instructional techniques that work with virtually all students.
 - c. rapid use of the latest methods of instruction.
 - d. strict adherence to carefully designed lesson plans.

ANSWER: a

4. Being a teacher is somewhat analogous to being
- a. a worker in a factory who is expected to produce a particular product efficiently.
 - b. the president of a company who directs the activities of all of its divisions.
 - c. a computer specialist who knows everything about one type of computer and nothing about any other type.
 - d. a rock that stands firm under any condition.

ANSWER: b

5. Many advancements in teaching and learning are due in large part to
- a. the accumulation of traditional practices.
 - b. philanthropic contributions.
 - c. the research of educational psychologists.
 - d. suggestions from parents and school board members.

ANSWER: c

6. Research shows that the most effective teachers generally have
- a. received little or no formal training but seem to have a genuine knack for instruction.
 - b. been paid the most for teaching.
 - c. earned excellent grades in all of their own course work.
 - d. received professional training.

ANSWER: d

7. The grade retention policies of many schools are examples of
- a. the implementation of practices based on sound scientific research.
 - b. practices based on studies that verify teachers' beliefs about intellectual development.
 - c. practices that have little scientific merit because they are based on unsystematic observation.
 - d. practices stemming from research that suggests that repeating a grade is beneficial to a student.

ANSWER: c

8. One example of how unsystematic observation may lead to poor educational policies or decisions is
- a. free school lunches.
 - b. assessment instruments.
 - c. Head Start programs.
 - d. grade retention policies.

ANSWER: d

Mr. Fradigio would like to investigate the effectiveness of forehead bandages on the retention of information among high school seniors in his school district. He believes that the tighter students tie their bandages the better they will recall lecture material. To see if his theory is correct, one-third of his morning history class wear extremely tight bandages, one-third wear moderately tight bandages, and one-third wear loose fitting bandages. To control for morning daydreamers, he asks his afternoon class to do the same. Each class does as he requests for each lecture. He then administers the regularly scheduled exam to each of the classes. He scores the exams without knowing which class or bandage group they came from. He repeats the same experiment the following term with a new group of students. He then writes about his experiment and reports the results in the weekly school newsletter. Mr. Fradigio's inquiry is an example of

9. Mr. Fradigio would like to investigate the effectiveness of forehead bandages on the retention of in...
- a. using constructivist teaching methods.
 - b. the scientific method.
 - c. selection and interpretation of data.
 - d. unsystematic observation.

ANSWER: b

Given the observations of David Berliner, how should you respond to someone who maintains that educational research is relatively easy to do?

10. Given the observations of David Berliner, how should you respond to someone who maintains that educa...

- a. State that educational issues are among the most difficult to research because of the complexity of educational processes and outcomes.
- b. Agree with the statement.
- c. State that educational research is difficult to conduct because it is not valued by educators or policy makers.
- d. State that educational research is difficult to conduct because researchers are frequently denied access to classrooms.

ANSWER: a

11. Educational psychologists who are familiar with research findings

- a. almost always agree on what the data indicate.
- b. tend to criticize and therefore ignore the quality of the data.
- c. rarely form conclusions on the basis of research findings.
- d. sometimes construct different interpretations of what the data mean.

ANSWER: d

12. The ongoing relationship between educational psychology research and practice is most like

- a. building a sand castle at the water's edge.
- b. building a skyscraper.
- c. driving a car.
- d. writing a novel.

ANSWER: d

13. To say that teaching is an art means that teaching

- a. is a relatively easy profession to master.
- b. requires flexibility in decision making.
- c. should be based entirely on scientific findings.
- d. is an undisciplined activity.

ANSWER: b

14. Which of the following characteristics accurately describes the art of teaching?

- a. The need for objective analysis
- b. Making use of assessments to modify educational goals
- c. An intuition for doing the right thing at the right time
- d. The ability to assign grades fairly

ANSWER: c

15. Effective teachers recognize that teaching

- a. doesn't need a scientific basis because it is such a straightforward enterprise.
- b. is propelled primarily by commonly understood anecdotes of what works in the classroom.
- c. is an art that should nonetheless have a good scientific basis.
- d. should be viewed solely as the ability to be objective in evaluation and to have a good grasp of the subject matter.

ANSWER: c

16. A teacher who views the discipline of teaching as both an art and a science is likely to

- a. be mechanical and indecisive.
- b. continue to use methods that have scientific support but appear not to be working well in the classroom.
- c. experiment with new teaching methods as soon as they appear in the literature.
- d. be inspiring and exciting while at the same time aware of current scientific research in the field of teaching.

ANSWER: d

Mr. Delmar, a health teacher, just read a research article that reported the importance of attention to a student's ability to learn something new. The next day he arrived in class wearing a skintight body suit illustrated with each of the organs in order to deliver a lecture on how systems in the body work. Mr. Delmar has attempted to combine

17. Mr. Delmar, a health teacher, just read a research article that reported the importance of attention...

- a. health with fashion.
- b. art with science.
- c. teaching with bad performance art.
- d. unrelated principles.

ANSWER: b

You have been hired by a large, inner-city school to coordinate an after-school mentoring program for at-risk children. On the first day of your new job you sit in your office as the rules and regulations you put into place are broken. You later hear from one of your coworkers that the children you are working with have, in the past, responded positively to the disciplinary efforts of another administrator in their regular school. It will most likely be in your best interest to

18. You have been hired by a large, inner-city school to coordinate an after-school mentoring program fo...

- a. continue with your current plan until the desired result is obtained.
- b. reprimand your coworker for questioning your judgment.
- c. reflect on your course of action and work on a new plan.
- d. dismiss the trouble since it is just the first day.

ANSWER: c

19. One mark of good teachers is that they

- a. are constantly evaluating the worth of their goals and their methods for trying to attain them.
- b. are always sure that their educational goals are worthwhile.
- c. generally find a single teaching approach that works with virtually all of their students.
- d. are able to use any new approach or technique, even if scientific evidence suggests that those techniques are questionable.

ANSWER: a

Heidi is frustrated with her science teacher. During his lecture, he writes important facts on the board but will not answer any questions about them. Heidi has politely tried on several occasions to tell the teacher of her frustration. Each time he apologizes and promises to change his methods of instruction. Each time he returns to his original form. Heidi's science teacher

20. Heidi is frustrated with her science teacher. During his lecture, he writes important facts on the b...

- a. is in charge and should run the class in the way that is most comfortable for him.
- b. is simply trying to get the students to think for themselves.
- c. does not possess even one of the three attitudes of a reflective teacher.
- d. seems to be reflective in his own way.

ANSWER: c

During algebra class, Mr. Harvey notices that many of his students are not paying attention to his famous "Quadratic Equation" lecture during which he draws funny chalk pictures to call attention to important steps. He instantly stops using the funny pictures and decides to alter his lecture by making it more interactive and student centered. The students immediately become more interested and begin to pay attention. Later that afternoon during his preparation period, he makes note of his failed attempt to capture the attention of the students with pictures and briefly outlines his altered lecture. Mr. Harvey has

21. During algebra class, Mr. Harvey notices that many of his students are not paying attention to his f...

- a. failed his class by omitting important funny drawings.
- b. given up on his abilities and skills as an educator.
- c. exhibited some of the qualities of a reflective teacher.
- d. missed the point of reflective instruction.

ANSWER: c

Subjective Short Answer

22. Define educational psychology. Also, provide three reasons why exposure to educational psychology may help you become a better teacher.

ANSWER: Educational psychology is a scientific discipline that studies how students acquire a variety of capabilities through formal instruction in classroom settings. Three pieces of evidence which suggest that exposure to educational psychology can enhance teaching effectiveness include: a. Teaching is a complex enterprise that requires a reservoir of knowledge and a wide range of instructional skills. b. A variety of research studies, conducted in realistic classroom settings, have offered useful ideas for improving instructional practices. c. Success in teacher-education classes is directly related to perceived teacher effectiveness.

23. Explain why teaching is ranked in the top 25 percent of all professions for complexity.

ANSWER: Teaching is a complex occupation because of the variability among students and the constant need to analyze the classroom environment and make instantaneous decisions that keep lessons on track. This skill requires that teachers be knowledgeable about a wide variety of topics and have a wide range of teaching skills from which to choose.

24. Explain how research conducted by educational psychologists can help make you a better teacher.

ANSWER: Educational psychology research provides insights and guidelines into all of those variables that affect classroom learning and teaching, such as using positive reinforcement, setting standards and performance expectations, supporting student study skills, understanding individual differences, and helping to motivate students.

25. Summarize the relationship between professional teacher education programs and competence as a teacher.

ANSWER: Teachers who have graduated from approved teacher education programs know more about learning and instruction and are judged to be more competent than those who teach without the benefit of such training.

26. Explain how unsystematic observations may lead to false conclusions.

ANSWER: Idiosyncratic factors may be observed, and such episodes may lead to false or misleading generalizations.

27. Explain why the use of grade retention is an example of how unsystematic observations may lead to false conclusions.

ANSWER: Beliefs about grade retention are often based on generalizations from a few personal experiences and are unsubstantiated in the literature.

28. Explain why it is important for researchers to focus on only a few aspects of a problem at one time rather than to examine several aspects of a problem within the framework of a single study.

ANSWER: Behavior is complex and generally has myriad causes. By examining only one or two aspects of behavior at a time under controlled conditions, the researcher can tease apart these causal factors.

29. Explain how the complexity of classroom teaching and learning affects research and efforts to apply that research.

ANSWER: As David Berliner has argued, schools and classrooms differ from each other in a number of ways, including quality and quantity of personnel, teaching methods, budget, leadership, and community support. In addition, cognitive and effective outcomes of schooling are affected by complex interactions among such factors as student characteristics, teacher characteristics, curriculum materials, socioeconomic status of the community, and peer influences. The result of all this complexity is that teaching methods and programs that work the same way for a broad sample of teachers and students in different school districts are few and far between.

30. Explain how two scientists who examine the same data may come to quite different conclusions.

ANSWER: Even among scientists, the way in which evidence is selected and interpreted will vary, thus leading to different conclusions.

31. Describe what is meant by the statement "Teaching as an art involves beliefs, emotions, values, and flexibility." How does teaching involve each of these qualities?

ANSWER: Teaching often involves strong beliefs about the value of education and of shaping students' minds, and about the important role of the educator. Teachers must use all of their persuasive powers, including emotion as well as knowledge, to incite and encourage students to learn. Teachers must also be flexible, in that they must be able to evaluate the effectiveness of their teaching strategies and alter their plans accordingly if their strategies are not working.

32. Explain how the artistic practice of teaching requires a solid scientific foundation.

ANSWER: Teachers must be able to draw upon established research findings in order to make themselves as effective as possible.

33. Why is it important for a teacher to be reflective?

ANSWER: Teachers need to be able to determine whether their goals are being met, to evaluate their goals and methods objectively, and to alter their strategies if their goals are not being met.

34. Suppose that, as a teacher, you encounter a student who appears to be bored with or confused by the subject matter you are teaching. Describe the approach you would take, wearing both your artist and your scientist hats, in an effort to reach this student.

ANSWER: First, I would try to ascertain why the student is bored or not comprehending. I would attempt to formulate a hypothesis. I would try to determine whether, for example, the student is passively rather than actively engaged in the subject matter. I might provide a list of specific objectives the student can meet, so that the student has some specific direction. I would try to engage the student by demonstrating enthusiasm and commitment. Finally, I would attempt to evaluate the results of my experiment by

examining the quality of the student's work after my intervention. If the quality appeared unchanged, I would attempt to gather new information in an effort to formulate and test a new hypothesis.

Essay

35. Discuss the strengths and limitations of the scientific approach to education.

ANSWER: The following strengths of scientific observation are listed in the text: representative sampling of subjects, controlled conditions, objective and systematic procedures, publication of findings, and replication (measurement issues might also be stressed). The following limitations are also listed in the same section: the limited number of factors/variables studied, conditions so controlled that the situation is very unlike the classroom, complex interactions among several classes of variables that make predicting and controlling outcomes difficult, disagreement on the interpretation of data/results, and the need to revise knowledge and applications in light of new research findings.

36. Explain why the limited focus of research, the complexity of teaching and learning, and the selection and interpretation of data are complicating factors in the study of behavior and thought processes.

ANSWER: Because behavior can be caused by many factors and frequently changes over time and in different settings, psychologists limit the focus of their investigations to one or a few variables in order to understand their effects on behavior. With this limited approach, psychologists hope to combine the results of many studies done over an extended period of time with different participants and in different settings into a comprehensive and usable body of knowledge. The differences that exist among classrooms, schools, and districts in terms of such factors as quantity and quality of personnel, budget, leadership, and community values limit the range of applicability of research findings. What may work well in one district may fail in another; what may be acceptable to educators and parents in one district may be rejected in a neighboring district. Another factor that limits uniformity of findings and applications is differences in how students process information. Although researchers may recruit subjects for an experiment that are similar in age, ability, gender, prior knowledge, and so on, these subjects may complicate the researcher's interpretation of the data by responding differently to the experimental materials and instructions. This is not done consciously by subjects in an attempt to ruin the experiment, but because people naturally differ in how they interpret their environment. This basic aspect of human nature is known as constructivism. The number of research articles available on most aspects of human behavior that are of interest to psychologists is so large that no one person can be expected to be aware of and have read all of them. Because of variations in the conditions of studies and the individual differences discussed above, not all researchers studying the same phenomenon draw the same conclusions. Consequently, researchers who read somewhat different parts of the same literature may draw different conclusions about the nature of some phenomenon.

37. Summarize the arguments that have been made for teaching as an art and for teaching as a science. Then explain how these two views can be combined.

ANSWER: Teaching is considered by some to be an art because the conditions under which teachers work and the way in which students respond are highly unpredictable, thereby requiring teachers to engage in a fair amount of improvising. Consequently, teaching can not be reduced to a set of procedures or prescriptions that are memorized and automatically run off, but involve making many on-the-spot and longer-term decisions that flow as much from one's motives, beliefs, and values, as from any body of formal knowledge. In other words, effective teachers are flexible in their use of specific teaching techniques, can communicate with students in different ways, can modify a lesson in just the right way when the need arises, and willingly work around impediments. On the other hand, a considerable body of relevant research evidence exists that can provide a solid foundation for much of what teachers do. Examples include providing students with increased time to learn, structuring upcoming lessons with instructional objectives and pretests, using questions and homework to keep students motivated, and providing corrective feedback and verbal reinforcement. These two approaches can be combined under the label, "The Teacher as Artistic Scholar." This means that teachers should not only be aware of what research has to say about the many topics that relate to classroom learning, but should also be aware of the limits of research in order to avoid an overly rigid or mechanical approach to teaching. For each lesson and group of students, teachers need to be able to figure out how to best use research findings to meet their instructional goals.

38. What is a reflective teacher? Provide an example of how a reflective teacher might behave, and explain in your example how a reflective teacher illustrates teaching as an art and a science.

ANSWER: Reflective teachers think about what they do, what their goals are, whether those goals are worthy, and whether their means for achieving those goals are appropriate. They are constantly evaluating their approaches and are aware of the extent to which scientific evidence supports their choices. Reflective teachers are aware of their students' needs and of whether their chosen approaches to learning are appropriate for all students. They are constantly trying to determine whether their job can be done better and are constantly evaluating their own work. For example, a teacher wishing to teach a lesson in biology may discover that the approach to teaching a certain lesson appears too difficult or boring to the class. A reflective teacher will realize this right away and try to do something about it, possibly by formulating a hypothesis about why the students are bored or uncomprehending, and will choose a different approach with this hypothesis in mind. If the change in strategy works for most of the class, but a few students remain bored or restless, the teacher may try a different approach with these particular students. Being a reflective teacher requires the teacher to be both scientist and artist, as described in the previous answer.