Introduction to Research in Education

A Multiple Choice

Test Booklet

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Chapter 1: The Nature of Scientific Research

1. ----------can generally be defined as "justified true belief." (p. 1)

1) Tradition
2) Ideology
3) Knowledge
4) Rationality

Answer: 3

- -

2. ----------into educational problems provides the most valuable source of knowledge to educators for decision making. (p. 1)

1) Experience
2) An authoritative statement
3) Tradition
4) Scientific inquiry

Answer: 4

- -

3. All of the following can be considered the ways in which human beings throughout history have sought knowledge EXCEPT----------. (p. 2)

1) experience
2) deductive reasoning
3) authority
4) opinion polls

Answer: 4

- -

4. All of the following can be considered the ways in which human beings throughout history have sought knowledge EXCEPT----------. (p. 2)

1) inductive reasoning
2) census
3) deductive reasoning
4) scientific inquiry

Answer: 2

- -

5. Which of the following can be considered (a) shortcoming(s) of "experience" as a source of knowledge? (p. 2)

1) Two people will have very different experiences in the same situation
2) People frequently need to know things that they as individuals cannot learn by experience (i.e. the range of things to know is beyond their capability).
3) People claim to have experienced a situation and have gained the knowledge when, in fact, they do not really have the knowledge to back up their claim
4) Both (1) and (2) are correct.

Answer: 4

- -

6. The ability to----------is a prime characteristic of intelligent behavior. (p. 2)

1) learn from experience
2) seek knowledge from authoritative sources
3) accept customs and traditions passed down through generations
4) make associations between coincidental phenomena

Answer: 1

- -

7. Which of the following can be considered a <u>shortcoming</u> of "authority" as a source of knowledge? (pp. 3-4)

1) Authorities can be wrong
2) Authoritative statements are often based on generalizations from statistical findings
3) Authoritative statements are necessarily elaborations on previously existing knowledge
4) Authoritative statements are more factual than ideological

Answer: 1

- -

8. ----------is a thinking process in which you proceed from general to specific knowledge through logical argument. (p. 4)

1) Inductive reasoning
2) Deductive reasoning
3) Data-driven reasoning
4) Interactive reasoning

Answer: 2

- -

9. **----------consists of a number of statements in relation to one another. The final statement is the conclusion, and the other statements, called *premises*, offer supporting evidence. (p. 4)**

1) Induction
2) Deduction
3) An argument
4) A conceptualization

Answer: 3

- -

10. Which of the following can be considered a <u>shortcoming</u> of "deductive reasoning" as a source of knowledge? (p. 5)

1) The conclusion of a syllogism exceeds that content of the premises.
2) Because deductive conclusions are necessarily elaborations on previously existing knowledge, you cannot conduct scientific inquiry through deductive reasoning alone.
3) New knowledge and conceptualizations can be gained through deductions from already established theory.
4) Generalizations can only be formulated from conceptually-driven deductions.

Answer: 2

- -

11. One of the shortcomings of the "deductive approach to knowledge is that -------. (p. 5)

1) the conclusion of a syllogism can never exceed the content of the premises
2) the conclusion of a syllogism exceeds the content of the premises
3) New knowledge and conceptualizations can be gained through deductions from already established theory.
4) Generalizations can only be formulated from conceptually-driven deductions.

Answer: 1

- -

12. ----------is a thinking process in which you proceed from specific examples/details to general knowledge. (p. 5)

1) Inductive reasoning
2) Deductive reasoning
3) Theory-driven reasoning
4) Conceptually-driven reasoning

Answer: 1

- -

Chapter 2: Research Approaches in Education

1. ----------research uses objective measurement to gather numeric data that are used to answer questions or test predetermined hypotheses. (p. 24)

1) Qualitative
2) Quantitative
3) Mixed-methods
4) Multi-method

Answer: 2

- -

2. ----------research focuses on understanding social phenomena from the perspective of the human participants in natural settings. It does not begin with formal hypotheses, but it may result in hypotheses as the study unfolds. (p. 24)

1) Qualitative
2) Quantitative
3) Mixed-methods
4) Multi-method

Answer: 1

- -

3. ----------believe that general principles or laws govern the social world as they do the physical world and that through objective procedures researchers can discover those principles and apply them to understand human behavior.

1) Positivists
2) Nativists
3) Interpretivists
4) Ethnographers

Answer: 1

- -

4. Which of the following is FLASE about qualitative research? (p. 25)

1) It sees the individual and his world as so interconnected that essentially the one has no existence without the other.
2) It sees social reality as single and seeks to verify it by following a conceptually-driven perspective.
3) It does not begin a study with hypotheses because researchers do not know in advance how naturally occurring events will unfurl or what variable may be important.
4) It seeks to understand human behavior by focusing on their unique social reality (i.e. the meanings that events have for the people involved).

Answer: 2

- -

5. The major distinction between ---------research and ----------research is that in the former the researcher categorizes the participants into "at least two groups" on one variable and then compares them on the other variable, while in the latter, the researcher deals with "one group" of individuals measured on at least two continuous variables. (p. 30)

1) ex post facto, correlational
2) correlational, ex post facto
3) survey, ex post facto
4) ex post facto, survey

Answer: 1

- -

6. A researcher wanted to investigate the difference between English grammar performance between high school freshmen. He selected two intact classes and named one class group A and the other class group B. He administered a pre-test of English grammar before the treatment starts. Group A was taught English grammar inductively using an Audiolingual method, and group B was taught English grammar using a deductive approach. After 10 sessions of treatments, the researcher administered a post-test of English grammar equivalent to the pre-test. Next, the results were analyzed using the SPSS software.
Based on the scenario above, the independent variable in this study is ----------. (pp. 28-30)

1) English grammar performance
2) the approach to teaching grammar
3) random assignment
4) the pre-test

Answer: 2

- -

7. Based on the scenario above, the dependent variable in this study is -------. (pp. 28-30)

1) English grammar performance
2) the approach to teaching grammar
3) random assignment
4) 10 sessions of treatments

Answer: 1

- -

8. The study above is a ----------research. (pp. 28-30, 325)

1) ex post facto
2) correlational
3) true-experimental
4) quasi-experimental

Answer: 4

- -

9. What would the researcher have to do to make the study "a true experiment"? (pp. 28-30)

1) Randomly assign each student to each group
2) Randomly assign one class as group A and the other as group B
3) Assign volunteers in group A and non-volunteers in group B
4) Run an Extra pre-test to ensure that both groups are homogeneous

Answer: 1

- -

10. How would the study be classified if it compared the English grammar performance of students who had "already" been taught using method A with the performance of those who had "already" been taught using method B? (pp. 29-30)

1) Ex post facto research
2) Correlational research
3) True-experimental research
4) Quasi-experimental research

Answer: 1

- -

11. When the direction and strength of the relationship of two or more variables is among the same subjects, we use a ----------research. (pp. 29-31)

1) ex post facto
2) correlational
3) survey
4) descriptive

Answer: 2

- -

12. Phenomenological studies are concerned with the major question of ---------. (p. 34)

1) How are events, processes, and activities *perceived* by the participant?
2) What can be learned about this phenomenon by studying certain *documents*?
3) What are the culture and perspectives of this group of people in its *natural* setting?
4) What does this experience *mean* for the participants in the experience?

Answer: 4

- -

13. ----------researchers begin with a "general topic of interest." The problem statement may ask the "why" and "how" of certain phenomena. (p. 35)

1) Quantitative
2) Qualitative
3) Both qualitative and quantitative
4) Natural sciences

Answer: 2

- -

14. The design of the ----------is "pre-planned", but the design of the ----------is often "emergent". (p. 35)

1) quantitative, qualitative
2) qualitative, quantitative
3) qualitative, mixed-methods
4) mixed-methods, quantitative

Answer: 1

- -

15. In an experiment, 78 ELT majors are randomly selected from among 400 ELT majors and then are randomly assigned to an experimental group (n=39) and a control group (n=39). The control group receives no treatment and they follow the normal instruction while the experimental subjects' awareness of some linguistic features is raised. At the end of the treatment, both groups are given a post-test.
The independent variable and the dependent variable in this study are ----------, respectively. (p. 41)

1) 400 ELT majors, 78 ELT majors
2) treatment, scores on the post-test
3) awareness raising, the post-test
4) the post-test, 78 ELT majors

Answer: 2

- -

16. In the scenario above, what is "ELT major"? (pp. 41-42)

1) The dependent variable
2) The independent variable
3) The constant
4) The moderator variable

Answer: 3

- -

17. The variable that inevitably precedes another one in time or is an antecedent to another variable is usually called the ----------. (p. 41)

1) dependent variable
2) independent variable
3) constant
4) intervening variable

Answer: 2

- -

18. A ----------is "a fixed value" within a study. (p. 42)

1) variable
2) use
3) construct
4) constant

Answer: 4

- -

19. Which research method would most effectively answer the following question?
"What is the relationship between EFL teachers' undergraduate background (i.e. language teaching, English literature, translation, and linguistics) and their use of L1 translation in the classroom?"

1) Survey
2) Ex post facto
3) Experimental
4) Correlational

Answer: 2

- -

20. Which research method would most effectively answer the following question?
"What is the influence of family education on children's motivation in language learning?"

1) Survey
2) Ex post facto
3) Experimental
4) Correlational

Answer: 2

- -

Chapter 3: The Research Problem

1. Systematic research begins with ----------. (p. 47)

1) research problem
2) significance of the study
3) constitutive definition of the construct
4) operational definition of the construct

Answer: 1

- -

2. Which one is FALSE? (pp. 48-49)

1) The first step in the identification of a research problem is deciding on a general area of interest.
2) The second step in the identification of a research problem is isolating a particular problem within that general area for investigation.
3) A researcher's own experience as an educational practitioner is the sole source of research problems.
4) Theories are a good source of problems for research.

Answer: 3

- -

3. ----------education refers to the fact that educational interventions and practices should be evaluated to determine their effectiveness before they are put into practice in the classroom. (p.49)

1) Evidence-based
2) Theory-informed
3) Critical-theory-informed
4) Appraisal

Answer: 1

- -

4. ----------means that a theory is capable of being proven *wrong*. (p. 50)

1) Falsifiability
2) Verification
3) Applicability
4) Argument-based inquiry

Answer: 1

- -

5. ----------is an essential activity in science because it provides *more evidence* of the validity of the original findings. (p. 52)

1) Falsification
2) Replication
3) Application
4) Methodology

Answer: 2

- -

6. What is WRONG with the following research question? (p. 61)
"Does high school English language teaching do any good?"

1) It defines no population and no variables.
2) It is too much objective.
3) It includes value judgements.
4) It lacks value judgements.

Answer: 1

- -

7. When a researcher is conducting a study to investigate "status quo" rather than a relationship between variables as in the question *"What is the relationship of native speakerism to no-L1-use attitude among EFL teachers?"*, the study ----------. (p. 63)

1) may be complete with only one variable as in surveys
2) can only be complete with both the independent and dependent variables
3) can only be researchable if we can conduct some kind of intervention
4) should be done with no variables involved

Answer: 1

- -

Chapter 4: Reviewing the Literature

1. Reviewing the literature must be completed early in ----------. (p. 67)

1) quantitative research but not in qualitative research
2) both quantitative and qualitative research
3) qualitative research but not in quantitative research
4) neither quantitative nor qualitative research

Answer: 1

- -

2. In ----------research, the search for related literature should be completed before the actual conduct of the study begins in order to provide a context and background that support the conduct of the study. (p. 68)

1) quantitative
2) qualitative
3) both quantitative and qualitative
4) both mixed-methods and qualitative research

Answer: 1

- -

3. Which of the following is NOT mentioned by Ary et al. (2014) as a function of the related literature in quantitative research? (pp. 68-69)

1) Through studying related research, investigators learn which methodologies have proven *useful* and which seem *less promising*.
2) The study of related literature places researchers in a better position to interpret the *significance* of their own results.
3) A thorough search through related research enables researchers to replicate previous studies *unintentionally*.
4) Reviewing related literature helps researchers to *limit* their research question and to *clarify* and define the *concepts* of the study.

Answer: 3

- -

4. When the researcher says, "The work of A, B, and C has discovered this much about my question; the investigations of D have added this much to our knowledge. I propose to go beyond D's work in the following manner," to which function of the related literature does he refer to? (p. 68)

1) Defining the frontiers of their field.
2) Placing the questions in perspective.
3) Placing researchers in a better position to interpret the significance of their own results.
4) Avoiding unintentional replication of previous studies.

Answer: 1

- -

5. Grounded theory is developed ----------after examining a body of data, and ----------. (p. 69)

1) deductively, and the data seek to fit the resulting theory
2) inductively, and the data seek to fit the resulting theory
3) deductively, the resulting theory seeks to fit the data
4) inductively, the resulting theory seeks to fit the data

Answer: 4

- -

6. "Theory-to-data-fitting" means ----------. (pp. 69-70)

1) we first collect our data and develop the theory that best fits our data
2) we simultaneously collect and develop theory
3) we first select a theory and try to collect data that best fits our theory
4) we first elect a theory and make deductions/hypotheses based on the theory and then seek to collect the required relevant data

Answer: 1

- -

7. "Data-to-theory-fitting" means ----------. (p. 69)

1) we first collect our data and develop the theory that best fits our data
2) we simultaneously collect and develop theory
3) we first select a theory and try to collect data that best fits our theory
4) we first elect a theory and make deductions/hypotheses based on the theory

Answer: 3

Chapter 5: The Hypotheses in Quantitative Research

1. After stating the research question and examining the literature, the quantitative researcher ----------based on the question. (p. 90)

1) starts the research project
2) states a hypothesis
3) starts the collection of data
4) answers the research question

Answer: 2

- -

2. The ----------presents the researcher's expectations about the relationship between variables within the question. (p. 90)

1) hypothesis
2) research question
3) focus of inquiry
4) constitutive definition

Answer: 1

- -

3. When does research proceed without hypotheses? (p. 91)

1) When the studies are undertaken in areas in which there is little accumulated background information.
2) When the researcher may not know what outcome to predict.
3) When the research question has a rich related literature, but the researcher is not sure about the outcome.
4) Both (1) and (2).

Answer: 4

- -

4. Which of the following is NOT mentioned by Ary et al. (2014) as a purpose or function of the hypothesis in quantitative research? (pp. 91-92)

1) The hypothesis provides the most satisfactory prediction or the best solution to a problem and how the variables are related.
2) When hypothesis resting research fails to validate a theory and the predicted hypotheses/deductions, our knowledge in the related areas may shrink.
3) Since the research question cannot be tested directly, the hypothesis provides a relational statement between the variables. Thus, only the proposed relationship between the variables which can be tested.
4) The hypothesis provides direction to the whole process of the research.

Answer: 2

- -

5. We know that "The hypothesis provides direction to the research". Which of the following is not consistent with this purpose or function of the hypothesis in quantitative research? (p. 92)

1) The hypothesis posits a specific relationship between variables and thus determines the nature of the data needed to test the proposition.
2) The hypothesis provides a basis for selecting the sampling, measurement, research procedures, and the appropriate statistical analysis.
3) The hypothesis helps keep the study restricted in scope, preventing it from becoming too broad or unwieldy.
4) The hypothesis provides a framework for the implications of the research.

Answer: 4

- -

6. Which of the following is TRUE about hypothesis derivation according to Ary et al. (2014)? (p. 93)

1) Hypotheses can only be derived inductively.
2) Hypotheses can only be derived deductively.
3) Hypotheses can be derived both inductively and deductively.
4) Hypotheses can be derived neither inductively nor deductively, but only through making specific predictions.

Answer: 3

- -

7. In the ----------procedure, the researcher formulates a/an ----------hypothesis by observing behavior, noticing trends or probable relationships, and then hypothesizing a generalization from or an explanation for the observed behavior. (p. 93)

1) inductive, inductive
2) inductive, iterative
3) deductive, deductive
4) deductive, iterative

Answer: 1

- -

8. Some hypotheses are derived by making specific predations from a theory or arriving at logical consequences of the theory. These hypotheses are known as ---------- hypotheses. (pp. 93-94)

1) inductive
2) deductive
3) iterative
4) data-driven

Answer: 2

- -

9. ----------hypotheses have the advantage of leading to a more general system of knowledge because the framework for incorporating them meaningfully into the body of knowledge already exists within the theory. (p. 94)

1) Deductive
2) Inductive
3) Data-driven
4) Iterative

Answer: 1

10. A/An ----------hypothesis can be defined as "the hypothesis as a generalization". (pp. 93-95)

1) inductive
2) deductive
3) tentative
4) iterative

Answer: 1

- -

11. A/An ----------hypothesis can be defined as "the hypothesis as a specific prediction". (pp. 93-95)

1) inductive
2) deductive
3) tentative
4) iterative

Answer: 2

- -

Chapter 6: Descriptive Statistics

1. Statistical procedures are of two types: ----------. (p. 113)

1) classical and modern
2) classical and latent trait
3) categorical and continuous
4) descriptive and inferential

Answer: 4

- -

2. The branch of statistics that organizes, summarizes, and presents data is known as----------. (p. 113)

1) descriptive statistics
2) inferential statistics
3) scales of measurement
4) empirical investigation

Answer: 1

- -

3. The branch of statistics that uses sample observations to draw conclusions about the unobserved larger population from which the sample is taken is known as----------. (p. 113)

1) descriptive statistics
2) inferential statistics
3) empirical investigation
4) scales of measurement

Answer: 2

- -

4. A research professor surveys the students in his class and finds that 35% are juniors and 65% are seniors. This is an example of----------. (Extra)

1) nominal data
2) interval data
3) inferential statistics
4) descriptive statistics

Answer: 4

- -

5. A student evaluation of teaching effectiveness for a particular course asks students to respond to their level of agreement with several statements according to the scale 1 = Strongly Agree, 2 = Agree, 3 = Neutral, 4 = Disagree, and 5 = Strongly Disagree. The responses indicate a/an----------scale of measurement. (pp. 113-116)

1) ordinal
2) interval
3) nominal
4) ratio

Answer: 3

- -

6. A survey in which students are asked to rank their favorites teachers from 1 to 5 would be an example of a/an----------scale of measurement. (pp. 113-116)

1) nominal
2) ordinal
3) interval
4) ratio

Answer: 2

- -

7. A systematic arrangement of individual measures from highest to lowest is called a ----------. (p. 117)

1) frequency distribution
2) sampling distribution
3) t-distribution
4) z-distribution

Answer: 1

- -

8. A graphical representation of a frequency distribution is called a--------. (pp. 117-119)

1) scatter diagram
2) time-series plot
3) stem-and-leaf plot
4) histogram

Answer: 4

- -

9. What is the difference between a bar chart and a histogram? (Extra)

1) Bar charts represent numbers, whereas histograms represent percentages.
2) A histogram does not show the entire range of scores in a distribution.
3) There are no gaps between the bars on a histogram.
4) Bar charts are circular, whereas histograms are square.

Answer: 3

- -

Note: Histograms are used to display interval/ratio variables, which involve a continuous range of values, and so there are no gaps between the bars that represent each category. Bar charts, on the other hand, display nominal or ordinal data, which fall into discrete categories. Following is a general categorization of **graphing distributions**.

1. Continuous Data
- **(1) histograms**
- **(2) frequency polygons**
- **(3) ogives**
- **(4) stem-and-leaf displays**

2. Discrete and Categorical Data
- **(1) bar charts**
- **(2) pie charts**

- -

10. Histograms, pie charts and frequency polygons are all types of ----------. (Extra)

1) one dimension diagrams
2) two dimension diagrams
3) cumulative diagrams
4) dispersion diagrams

Answer: 1

- -

11. Histograms and pie charts are classified as one dimensional diagrams because only ----------. (Extra)

1) length is considered
2) width is considered
3) length plus width is considered
4) breadth is considered

Answer: 1

- -

12. A researcher wants to display the relationship between the variables "number of words a learner knows" and "the number of hours he/she studies". The most appropriate graphical display would be ----------. (PhD Test, 1397)

1) bar chart
2) histogram
3) scatter plot
4) stem plot

Answer: 3

- -

Note: Scatter plots are used to show correlations between two variables.

- -

13. Which one of the following is NOT appropriate for studying the relationship between two quantitative variables? (PhD Test, 1396)

1) Bar chart
2) Scatterplot
3) Correlation
4) Regression

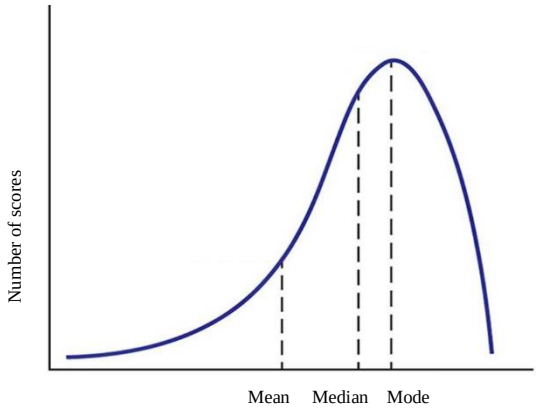
Answer: 1

- -

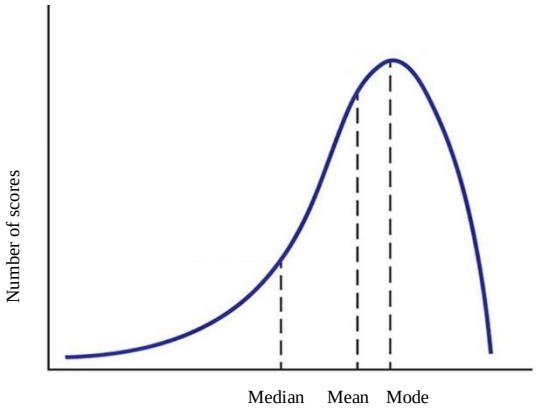
Note: As stated above, bar charts are used with "Discrete and Categorical Data." Bar charts are much like histograms, except that the bars are separated from one another, whereas the vertical rectangles or bars on histograms touch each other.

- -

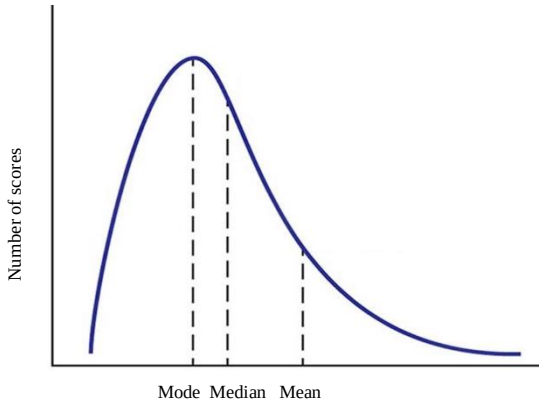
14. Which shape is correct for a positively skewed distribution? (pp. 124-125)



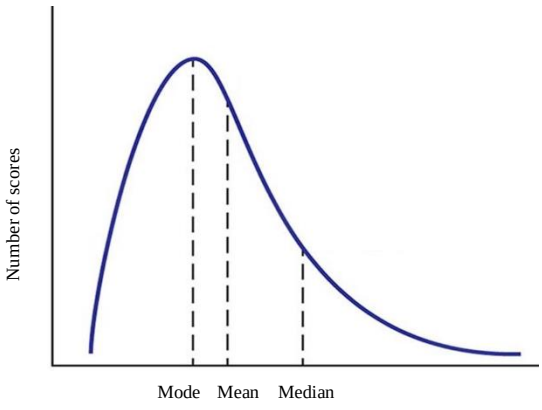
(1)



(2)



(3)

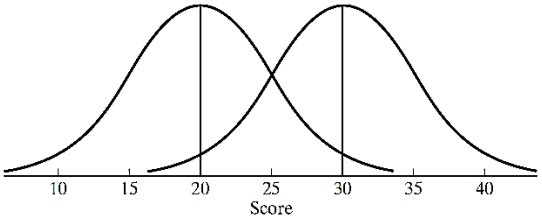


(4)

Answer: 3

- -

15. Which of the following is FALSE with regard to the following two distributions? (pp. 124-126)

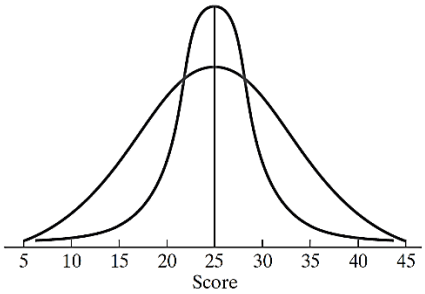


1) Both distributions are symmetrical.
2) Both distributions are normal.
3) The distributions differ with regard to central tendency.
4) The distributions differ with regard to variability.

Answer: 4

- -

16. Which of the following is FALSE with regard to the following two distributions? (pp. 124-126, Extra)



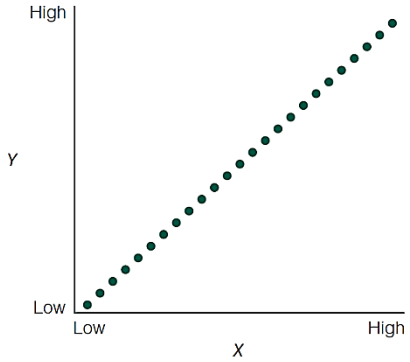
1) Both distributions are symmetrical.
2) The distributions differ with regard to central tendency.
3) The distributions differ with regard to variability.
4) One of the distributions is mesokurtic while the other is leptokurtic.

Answer: 2

- -

17. The scatterplot below illustrates a ----------correlation. (pp. 145-146)

1) perfect positive linear
2) perfect negative linear
3) positive curvilinear
4) negative curvilinear

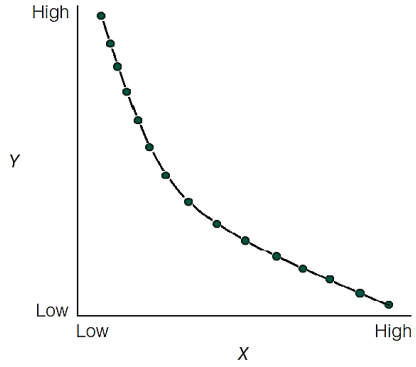


Answer: 1

- -

18. The scatterplot below illustrates a ----------correlation. (pp. 145-146)

1) perfect positive linear
2) perfect negative linear
3) positive curvilinear
4) negative curvilinear

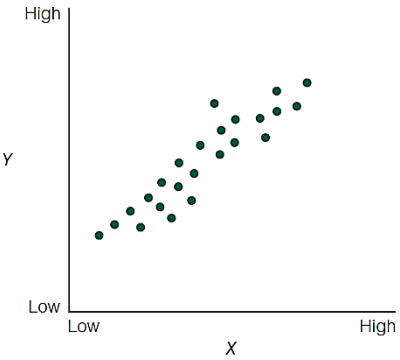


Answer: 4

- -

19. The scatterplot below illustrates a ----------correlation. (pp. 145-146)

1) high positive
2) high negative
3) positive curvilinear
4) negative curvilinear

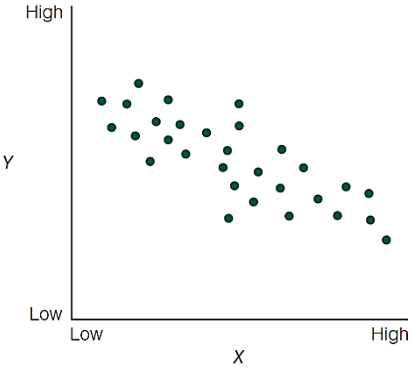


Answer: 1

- -

20. The scatterplot below illustrates a ----------correlation. (pp. 145-146)

1) high positive
2) high negative
3) positive curvilinear
4) negative curvilinear



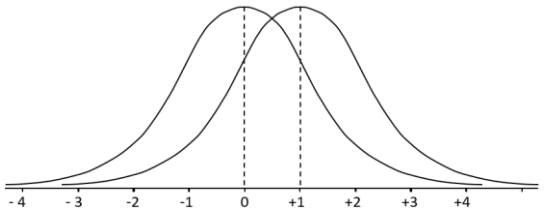
Answer: 2

- -

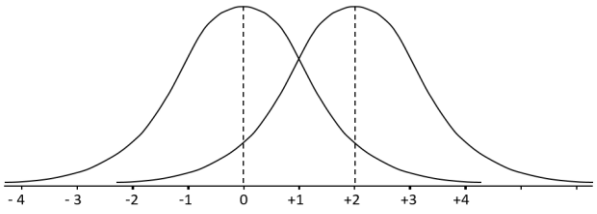
21. Which of the following figures illustrates the result of the following effect size formula? (pp. 149-151)

$$\text{Glass's } \Delta = \frac{\bar{X}_e - \bar{X}_c}{S_c} = (96 - 76)/10 = 2$$

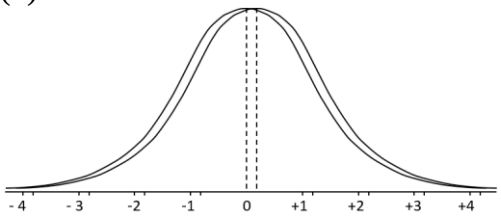
(1)



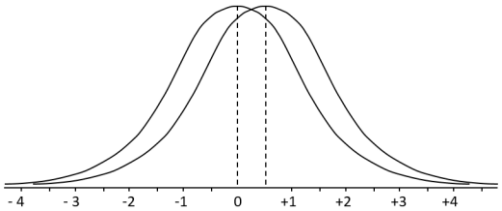
(2)



(3)



(4)



Answer: 2

Chapter 7: Sampling and Inferential Statistics

1. After making observations of a sample, researchers employ induction to generalize findings to the entire population from which the sample was drawn. This is called ----------. (p. 161)

1) descriptive statistics
2) inferential statistics
3) sampling distribution
4) a nondirectional test

Answer: 2

- -

2. A portion of all members of any well-defined class of people, events, or objects that is observed is called a ----------. (p. 161)

1) population
2) sample
3) sampling
4) parameter

Answer: 2

- -

3. A ----------is defined as all members of any well-defined class of people, events, or objects. (p. 161)

1) population
2) sample
3) parameter
4) statistic

Answer: 1

- -

4. Which of the following is FALSE? (p. 161)

1) Inferential statistics is based on the laws of probability and are best estimates rather than absolute facts.
2) In making statistical inferences, a certain degree of error is involved.
3) Inferential statistics can be used to test hypotheses about samples on the basis of observations of a sample drawn from a population.
4) Statistical induction or inference is a procedure whereby you estimate parameters from statistics

Answer: 3

- -

5. In ----------, we have true means and true standard deviations about the population. (p. 161)

1) inferential statistics
2) statistical inferences
3) perfect induction
4) imperfect induction

Answer: 3

- -

6. While the ----------population is the large group to which the researcher wishes to generalize the results of the study, the ----------population is the population of subjects available to the researcher for drawing a sample. (p. 162)

1) random, target
2) target, random
3) accessible, target
4) target, accessible

Answer: 4

- -

7. When researchers draw a sample from the accessible population, they can generalize the results of the research study to the----------. (p. 162)

1) whole population
2) target population
3) accessible population
4) sample only

Answer: 3

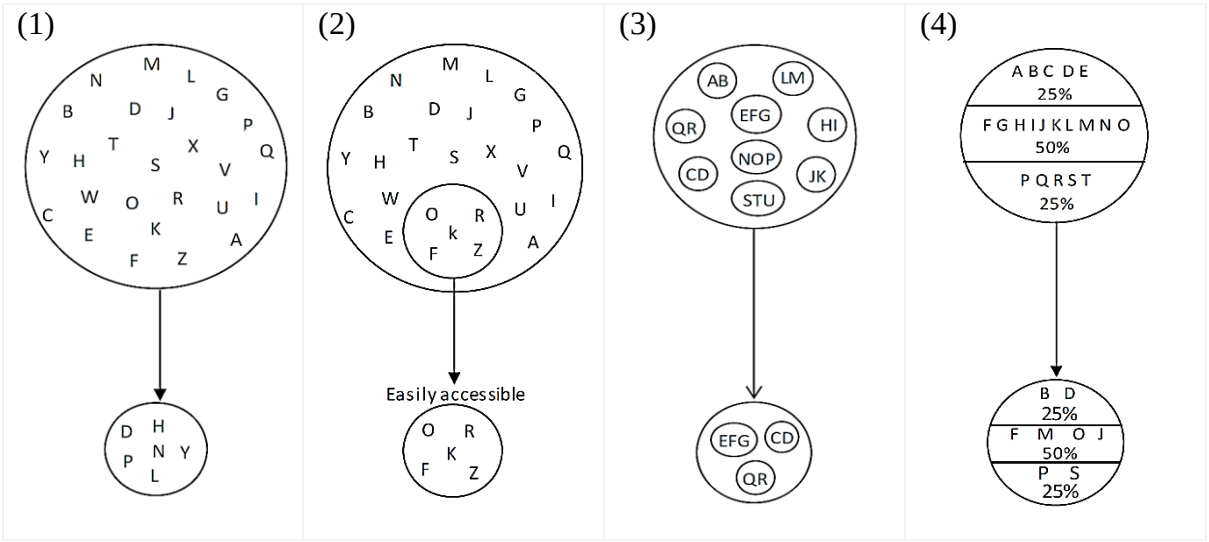
8. ----------sampling involves sample selection in which every member or element of the population has "an equal chance" of being chosen. (p. 162-163)

1) Nonprobability
2) Probability
3) Convenience
4) Purposive

Answer: 2

- -

9. Which of the following figures best illustrates stratified sampling? (Extra)



Answer: 4

- -

Note: Fig.1 is 'simple random sampling', Fig.2 is 'convenience sampling', Fig.3 is 'cluster sampling', and Fig.4 is 'stratified sampling'.

- -

10. When the population to be "randomly" sampled is NOT homogeneous but consists of several "subgroups", ----------sampling may give a more representative sample than simple random sampling because in simple random sampling, certain subgroups may by chance be over- or under-represented in the sample. (p. 167)

1) quota
2) purposive
3) stratified
4) convenience

Answer: 3

- -

Note:
Cohen et al. (2007, pp. 110-117; 2011, pp. 153- 161) classify sampling types as follows:

I. Probability sampling

A. Simple random sampling
B. Systematic sampling
C. Random stratified sampling
D. Cluster sampling
E. Stage sampling
F. Multi-phase sampling

II. Non-probability sampling

A. Convenience sampling
B. Quota sampling
C. Purposive sampling
   1. Typical case sampling
   2. Boosted sampling
   3. Negative case sampling
   4. Maximum variation sampling
D. Dimensional sampling
E. Snowball sampling
F. Volunteer sampling
G. Theoretical sampling

Other classification are also provided by different scholars. For more information see Cohen et al. (2011, pp. 153- 161)

- -

11. A biased sample is a sample which is --------------of the target population. (p. 168)

1) representative
2) unrepresentative
3) a random sample
4) an unpredictable sample

Answer: 2

- -

- -

12. If a true null hypothesis is rejected, the researcher has committed a ----------. (p. 176)

1) hypothetical error
2) judgmental error
3) Type I error
4) Type II error

Answer: 3

- -

13. The rejection of a true null hypothesis is labeled a ---------------. (pp. 176-177)

1) Type I error
2) Type II error
3) a false negative
4) a miss

Answer: 1

- -

14. As (1-β), the desired probability of rejecting the null hypothesis becomes ----------, the number of subjects needed ------------. (p. 183)

1) larger, becomes larger
2) smaller, becomes larger
3) larger, becomes smaller
4) larger, remains constant

Answer: 1

- -

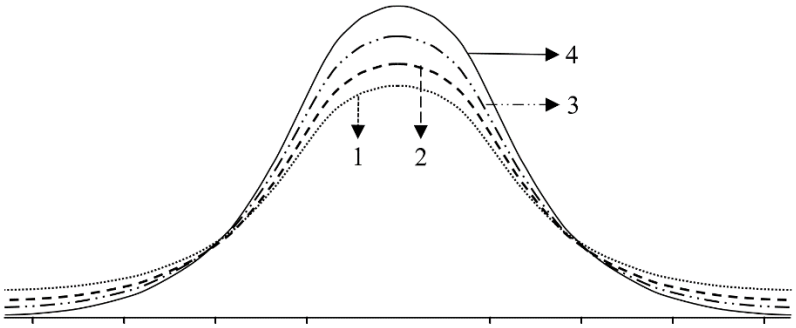
15. As the heterogeneity (variance) within the samples increases, the probability of Type I error ----------, the probability of Type II error ----------, and power ----------. (p. 184)

1) increases, decreases, increases
2) stays the same, increases, decreases
3) stays the same, decreases, increases
4) increases, increases, increases

Answer: 2

- -

16. Which of the following *t* distributions has a smaller degree of freedom? (p. 188)



1) *T* curve number 1
2) *T* curve number 4
3) *T* curves number 2 and 3
4) *T* curves number 3 and 4

Answer: 1

- -

17. ---------- is a statistical procedure used to analyze the data from a study with more than two groups. (p. 192)

1) Factorial ANOVA
2) One-way ANOVA
3) Paired samples t-test
4) Repeated-measures t-test

Answer: 2

- -

18. A researcher has done a research involving three 10-participant groups of learners, and the obtained *F* ratio is 5.49. He has already consulted the table of critical values for *F* and the critical value provided for 2 and 27 degrees of freedom is 3.35 at the .01 level. ----------. (p. 196)

1) Because the obtained *F* ratio is greater than the critical value of 3.35 at the .01 level, the researcher can conclude that the obtained *F* ratio is statistically significant and the null hypothesis can be rejected at that level.
2) Because the obtained *F* ratio is greater than the critical value of 3.35 at the .01 level, the researcher cannot conclude that the obtained *F* ratio is statistically significant and the null hypothesis cannot be rejected at that level.
3) Because the degrees of freedom are not appropriately calculated, the results cannot be trusted.
4) Because the number of participants in each group is less than 30, the normality assumption of ANOVA is not fulfilled, and, in turn, the results cannot be generalized to the target population from which the sample was taken.

Answer: 1

- -

19. Which of the following is FALSE? (p. 196)
1) A statistically significant *F* ratio indicates that at least one out of all possible comparisons between pairs of means or combinations of means will be statistically significant.
2) A statistically significant *F* ratio means that all groups differ from all other groups.
3) The statistically significant *F* may be a result of a difference between one group and the rest of the groups.
4) In ANOVA, when we are assured that there is a statistically significant difference between our group means, we need further statistical tests, called *post hoc* comparisons, to indicate the means that are statistically significantly different from other means.

Answer: 2

- -

20. Tukey and Scheffé are two of the most widely used --------------. (p. 197)
1) descriptive comparisons
2) non-parametric tests
3) effect size indices
4) post hoc tests

Answer: 4

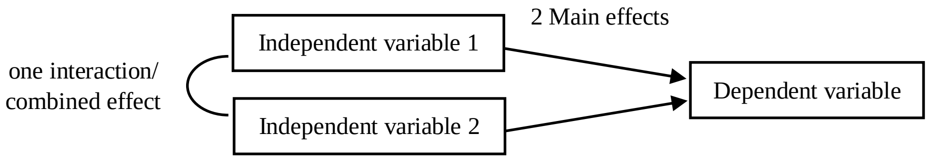
- -

21. In a two-way ANOVA, the end product of the analyses will be ------ *F* ratios. (p. 198)
1) two
2) three
3) four
4) five

Answer: 2

- -

Note: In a two-way ANOVA, the end product of the analyses will be three *F* ratios: two indicating the significance of the two main effects (for each independent variable) and the third indicating that of the interaction effect as shown in the figure below.



- -

22. How many research questions (or null hypotheses) does a two-way ANOVA have? (implied, p. 198)
1) One
2) Two
3) Three
4) Four

Answer: 3

- -

23. Which statistical test is appropriate for the following research question? (Extra)
Is there a statistically significant difference in the reading comprehension scores of male and female students of literature, teaching, and translation?
1) Paired-samples *t*-test
2) One-way ANOVA
3) Two-way ANOVA
4) Two-way MANOVA

Answer: 3

- -

Chapter 8: Tools of Research

1. We can measure constructs through their ---------- that are accepted as being valid indicators of those constructs. (p. 214)

1) primary factors
2) secondary factors
3) observable behaviors
4) consistency

Answer: 3

- -

2. Using 'indicators' to approximate constructs is the ---------aspect of research. (p. 214)

1) sampling
2) measurement
3) ontological
4) epistemological

Answer: 2

- -

3. Which of the following CANNOT be appropriately measured by using a single indicator? (p. 214)

1) Grade level
2) Nationality
3) Marital status
4) Intelligence

Answer: 4

- -

4. To develop an appropriate instrument for measuring a construct, researchers need to identify its indicators --------. (p. 215)

1) by turning first to the theory behind the construct
2) through logical analysis
3) by means of observational techniques
4) by means of response elicitation techniques

Answer: 1

- -

5. Which of the following is FALSE about "tests"? (p. 215)

1) Tests are the most widely used measuring instruments in qualitative educational research.
2) A test is a set of stimuli presented to an individual in order to elicit responses on the basis of which a numerical score can be assigned.
3) A test may be presented in written form, orally, or in a performance setting.
4) Tests are available to measure both cognitive and noncognitive traits.

Answer: 1

- -

6. Which of the following is FALSE? (p. 215)

1) The utility of scores as indicators of the construct of interest is in large part a function of the objectivity, validity, and reliability of the tests.
2) Objectivity is the extent of consistency among scores.
3) In general, validity is the extent to which a test measures what it claims to measure.
4) Reliability is the extent to which the test measures accurately and consistently.

Answer: 2

- -

7. The following are the responses to a Likert questionnaire circled by a respondent and the score for each item. Since the mean attitude score of the individual is less than 3, we conclude that this individual has a ---------- attitude toward the issue of interest in the research study. (p. 228)

Response	Score
1. Disagree	2
2. Strongly Disagree	1
3. Disagree	2
4. Agree	2
5. Agree	2
6. Undecided	3

1) moderately positive
2) moderately negative
3) completely negative
4) completely positive

Answer: 2

- -

8. The best reliability index to use for an attitude scale is ----------, which provides a measure of the extent to which all the items are positively intercorrelated and working together to measure one trait or characteristic (i.e. the attitude). (p. 229)

1) inter-rater reliability
2) coefficient alpha
3) Guttman reliability
4) KR-20

- -

9. The score of 5.8 of a bipolar adjective scale indicates a ---------- attitude toward the object, group, or concept of interest in the research study. (p. 230)

1) moderately positive
2) moderately negative
3) very positive
4) very negative

Answer: 3

- -

10. The following figure is an example of ----------. (p. 230)

a. bad							✓	good
b. fast		✓						slow
c. dull						✓		sharp
d. pleasant	✓							unpleasant
e. light			✓					heavy
f. passive							✓	active
g. worthless						✓		valuable
h. strong				✓				weak
i. still					✓			moving

1) a Likert scale
2) a bipolar adjective scale
3) a category scale
4) a comparative rating scale

Answer: 2

- -

11. Which of the following is NOT an error in rating? (p. 232)

1) Halo effect
2) Observer effect
3) Generosity error
4) Error of central tendency

Answer: 2

- -

Note:

Halo effect is defined differently in other books. For example, **Mackey and Gass** (2016, p. 166) state that halo effect occur when participants try to please the researcher by giving the answers or responses they think they are expected. Mackey and Gass (2016, p. 226) also state that "this halo effect happens when the interviewees pick up cues from the researcher related to what they think the researcher wants them to say, thus potentially influencing their responses. Compare this with "Hawthorne effect" (Ary et al, 2014, p. 303), "observer effect" in Ary et al. (2014, p. 236) and "experimenter effect" in Ary et al. (2014, p.302).

Ary et al. (2014, p. 303) define **Hawthorne effect** as the tendency for subjects to change their behavior just because of the attention gained from participating in an experiment. Ary et al. (2014, p. 236) remark that **observer effect** occurs when people being observed behave differently just because they are being observed. They also state that **experimenter effect** refers to unintentional effects that the researcher has on the study (p.302).

Cohen et al. (2007, p. 159; 2011, p. 210) state that "the halo effect, wherein a student who is judged to do well or badly in one assessment is given undeserved favorable or unfavorable assessment respectively in other areas." They (2007, p. 189; 2011, p. 246) add that "The *halo effect* – where existing or given information about the situation or participants might be used to be selective in subsequent data collection, or may bring about a particular reading of a subsequent situation (the research equivalent of the *self-fulfilling prophecy*). *This is an issue of reliability,* and can be addressed by the use of a wide, triangulated database and the assistance of an external observer. The *halo effect* commonly refers to the researcher's belief in the goodness of participants (the participants have haloes around their heads!), such that the more negative aspects of their behavior or personality are neglected or overlooked. By contrast, the *horns effect* refers to the researcher's belief in the badness of the participants (the participants have devils' horns on their heads!), such that the more positive aspects of their behavior or personality are neglected or overlooked.

- -

12. The ---------- is an error in rating which occurs when raters allow a generalized impression of the subject to influence the rating given on very specific aspects of behavior. (pp. 232, 236)

1) halo effect
2) observer effect
3) error of central tendency
4) error of severity

Answer: 1

- -

Chapter 9: Validity and Reliability

1. Quantitative research always depends on----------. (p. 241)

1) trustworthiness
2) measurement
3) credibility
4) dependability

Answer: 2

- -

2. ----------is defined as the extent to which scores on a test enable one to make meaningful and appropriate interpretations. (p. 241)

1) Scorability
2) Dependability
3) Reliability
4) Validity

Answer: 4

- -

3. ----------indicates how consistently a test measures whatever it does measure. (p. 241)

1) Scorability
2) Credibility
3) Reliability
4) Validity

Answer: 3

- -

4. Historically, ----------was defined as the extent to which an instrument measured what it claimed to measure. (p. 242)

1) validity
2) reliability
3) scorability
4) dependability

Answer: 1

- -

5. The advantage of inter-item consistency measures over split-half measures is that they deal with --------- (as a source of error), as well as the content sampling (as another source of error). (p. 262)

1) overestimation and underestimation of the content domain
2) aggregation of the item scores
3) the homogeneity of the behavior domain sampled
4) reliability inflation

Answer: 3

- -

6. A college professor administers a 40-item multiple-choice test of grammar. The scoring office provides the professor a reliability index found by dividing the test into two forms and calculating the correlation between the students' scores on the two. The type of reliability coefficient used is ----------. (p. 268)

1) coefficient of equivalence
2) split-half reliability coefficient
3) coefficient of stability
4) coefficient alpha

Answer: 2

- -

7. A teacher questions the results of a verbal aptitude test administered to her English class. She decides to have the students take the same test on the following day. She then correlates the two sets of scores and finds a coefficient of .90. The type of reliability coefficient used is ----------. (p. 268)

1) coefficient of equivalence
2) split-half reliability coefficient
3) coefficient of stability
4) coefficient alpha

Answer: 3

- -

8. The following is a comment often heard from students following exams. To what test characteristic is the comment "most directly" related? (pp. 280-281)
Many students were observed to be cheating.

1) Construct validity.
2) Content validity.
3) Reliability.
4) Scorability.

Answer: 3

- -

Note: Cheating changes scores and it is a source of random error. All sources of random error are related to reliability of scores. For more information see page 254.

- -

Chapter 10: Experimental Research

1. Which of the following is FALSE about experimental research? (p. 285)
It is a scientific investigation in which the researcher ----------.
1) manipulates one or more independent variables
2) controls any other relevant variables
3) studies a naturally occurring behavior in its cultural or social group
4) observes the effect of the manipulations on the dependent variable(s)

Answer: 3

- -

2. ---------- allow 'replication' and ultimately the 'establishment of law-like propositions' about social activities. (pp. 32-34, 285)
1) Ethnographic research
2) Experimental methods
3) Narrative inquiry
4) Basic interpretive studies

Answer: 2

- -

3. 'Manipulation' is also known as ----------. (p. 285)
1) interference
2) intervention
3) investigation
4) insertion

Answer: 2

- -

4. Which of the following is NOT an example of an experimental research question? (pp. 30, 286)
1) What are the attitudes of EFL learners about teacher autonomy?
2) What is the influence of affective teacher-student relationships on students' engagement and achievement?
3) What is the effectiveness of a curriculum to increase language learning strategy use awareness among EFL majors?
4) How do two new strategies for the teaching of reading compare in effectiveness?

Answer: 1

- -

5. A researcher compares volunteers with nonvolunteers following the experimental treatment. The researcher does not know if the differences are caused by the treatment or by preexisting differences between the two groups. There exists a confounding effect or a threat to internal validity in this study. The confounding effect is called ----------. (pp. 299-300)
1) testing effect
2) statistical regression
3) selection bias
4) instrumentation effect

Answer: 3

- -

6. In a longitudinal study, several of the lowest scorers on a pretest gradually drop out of the control group. It is probable that any differences obtained on the posttest could be attributed to ---------- because differential loss might result in differences on the outcome measure even in the absence of treatment. (p. 300)

1) selection bias
2) diffusion
3) attrition
4) testing effect

Answer: 3

- -

7. In a study, the subjects in the experimental group are taught a second language by an innovative method. They get so excited about the project that they share information with their friends in the control group. Later, both groups perform similarly on the dependent variable – not because the new method was ineffective but because its effects were disseminated to the control group as well. This effect is referred to as ----------, as a threat to internal validity. (p. 304)

1) diffusion
2) testing effect
3) placebo effect
4) ceiling effect

Answer: 1

- -

8. A teacher wanted to investigate the effectiveness of new teaching materials designed to increase students' reading comprehension. One of her classes used the new materials, and another class used the conventional materials. Both classes took a reading test at the end of the semester. (p. 304)
Which of the following is less likely to be a potential threat to the internal validity of this research?

1) Selection bias
2) Experimenter effect
3) Diffusion
4) Experimental mortality

Answer: 4

- -

9. A researcher decides to investigate the effect of tutoring on reading comprehension scores. He runs a study and the results show that the eight-grade students who volunteer to tutor third-graders in reading show greater improvement in their own reading scores than the comparison group that does not participate in tutoring. (Extra)
Which of the following is <u>most</u> likely to be a threat to the internal validity of this study?

1) Selection bias
2) History
3) Maturation
4) Testing effect

Answer: 1

- -

Notes:
1. Since the experimental group "volunteered" to participate in the study, there is a selection bias.
2. Since there is a control group, history and maturation are less likely to be threat to this study.
3. Since no pre-test is used, testing effect is less likely to be a threat to the internal validity of this research.

- -

Chapter 11: Experimental Research Designs

1. The <u>research design</u> is important because it <u>determines</u> the study's----------, which is the ability to reach valid conclusions about the effect of the experimental treatment on the dependent variable. (p. 324)

1) construct validity
2) external validity
3) internal validity
4) statistical conclusion validity

Answer: 3

---

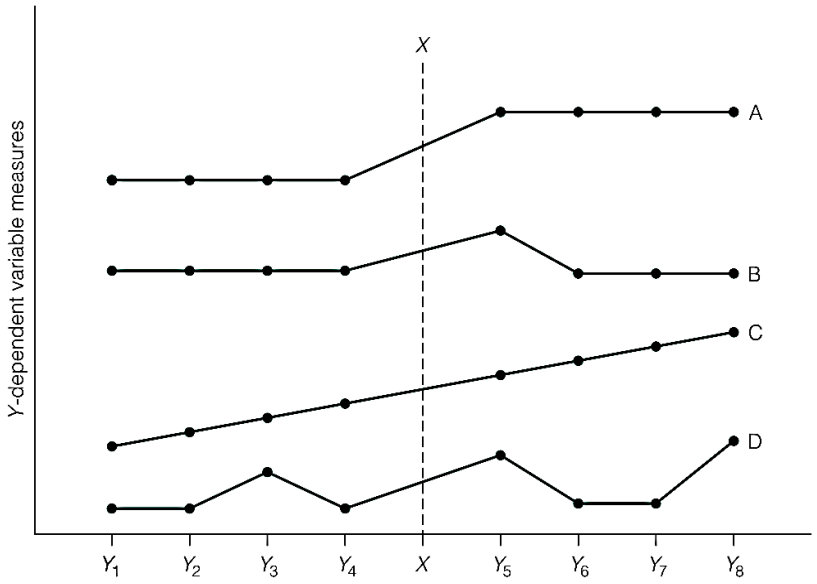
2. Research designs differ from each other with respect to all of the following EXCEPT ----------. (p. 324)

1) their efficiency
2) their demands in terms of time and resources
3) how effectively they rule out threats to internal validity
4) their research topic

Answer: 4

---

3. Which of the following is false about the possible outcome patterns in a Time-Series Design shown in the figure below? (p. 344)



1) From examining the difference between Y_4 and Y_5, and the stability of the results in Pattern A, it would be justified in assuming that the treatment affects the dependent variable.
2) Pattern B suggests the possibility of a temporary experimental effect of the treatment.
3) One could assume that the treatment produces the change in Pattern C.
4) One could not assume that the treatment produces the change in Pattern D. The erratic nature of pattern D suggests the operation of extraneous factors.

Answer: 3

Note: One could not assume that the treatment produces the change in Pattern C. Pattern C appears to result from *maturation* or *a similar influence*.

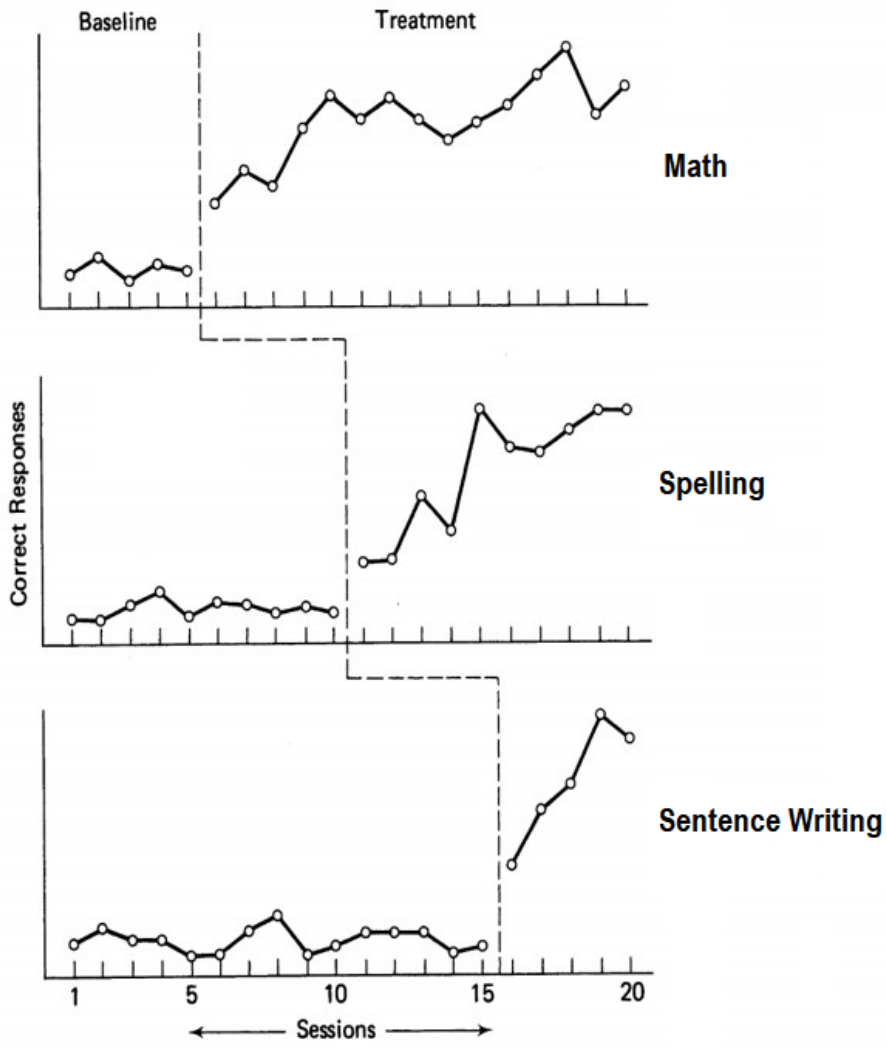
4. As shown in the figure above (in the one-group time-series design), the --------- provide(s) a check on some common threats to internal validity. Maturation, testing, and regression could be ruled out as plausible explanations of the shift occurring between ---------(i.e. between before-and-after treatment measures) if such shifts do not occur in the previous time periods under observation. (pp. 344-345)

1) repeated testing, Y_4 and Y_5
2) pretesting, Y_1 to Y_4
3) posttesting, Y_5 and Y_8
4) penultimate and the final posttests, Y_7 and Y_8

Answer: 1

- -

5. To which design does the following schematic representation belong? (pp. 349-350, Extra)



1) single-baseline
2) multiple-baseline across behaviors
3) multiple-baseline across participants
4) multiple-baseline across settings

Answer: 2

- -

6. Consider the following research question: Does teaching the first year of French through an oral-aural approach, rather than the grammar-transformational method, alter pupil performance on a standardized year-end test in grammar, reading, and vocabulary? You also want to know if the two methods of teaching French have differential effects for boys and girls. (p. 353)
What experimental design is appropriate for this study and permits you to answer these two questions at the same time?

1) Randomized subjects, posttest-only control group design
2) One-shot case study design
3) A simple factorial design
4) A complex factorial design

Answer: 3

- -

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