

Educational Research Methodology

Professional Diploma Research Methodology

Your brother and sister:

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Quiz 1 (Action Research)

1. In an experiment, the variable that is manipulated is called the..... Variable
(a) Independent. (b) confounding. (c) dependent (d) extraneous (e) intervening
2. A variable that changes in a systematic way with the independent variable and may also affect the dependent variable is known as a/anvariable
(a) Independent (b) dependent (c) confounding (d) intervening (e) extraneous
3. The following are true statements about action research EXCEPT
(a) data are collected systematically (b) data are systematically analyzed.
(c) Data are always quantitative. (d) results are generalizable.
(e) results are used to improve practice.
4. A researcher uses an experimental design to study the effect of the key word method on vocabulary enrichment. In this experiment, the Independent Variable is:
(a) vocabulary enrichment (b) grammar mastery
(c) the key word method (d) both the key word method and vocabulary enrichment
(e) neither the key word method nor vocabulary enrichment
5. The word action in the phrase "action research" refers to.....
(a) the use made of the findings. (b) the fact that the teacher is the researcher.
(c) the actions that teachers take to improve the teaching/learning process.
(d) the process of collecting data.
(e) the process of analyzing data.
6. Individuals who engage in action research are most concerned with.....
(a) supporting the way things are being done. (b) providing a hypothesis.
(c) showing their peers how competent they are. (d) publishing results.
(e) improvement.
7. Which of the following is NOT an assumption of action research?
(a) Action researchers have basic research skills to collect and analyze data.
(b) All professionals need and want feedback on their performance.
(c) Results enable the researchers to evaluate the performance of others.
(d) Teachers are capable of assuming responsibility for their own professional growth.
8. A teacher conducts an action research study of the problem-solving methods used by students in her ninth-grade Algebra I classes. Which of the following can she assume on the basis of her study?
(a) Results apply to students only in her ninth-grade Algebra I classes.
(b) Results apply only to students in Algebra I classes at her school.
(c) Results apply only to Algebra I students in ninth grade.
(d) Results apply to all math students.

9. Which of the following is NOT an assumption of action research?

- (a) Action researchers have basic research skills to collect and analyze data.
- (b) All professionals need and want feedback on their performance.
- (c) Results enable the researchers to evaluate the performance of others.
- (d) Teachers are capable of assuming responsibility for their own professional growth.

10. Many universities will not allow action research studies to satisfy dissertation or thesis requirements. This is most likely because.....

- (a) the student is not expected to engage in all steps of the research process in action research.
- (b) the results are not of broad relevance.
- (c) the findings are not immediately useful.
- (d) the student would not have to demonstrate skill in data analysis

11. Action research usually takes place in a single school because.....

- (a) It is difficult to secure permission to study students in multiple schools.
- (b) teachers do not have the necessary skills to conduct research across multiple settings.
- (c) It is designed to answer questions about improving practice in a particular setting.
- (d) data collection methods used in action research are designed for single settings.

12. Action research is usually conducted by classroom teachers ,who aren't trained in the methodology of research.

- (a) True
- (b) False

13. Action research is.....

- (a) Research which involves participants in some sort of physical activity
- (b) Conducted by participants rather than being about them
- (c) No different from everyday activities involved in improving professional practice
- (d) Not bound by ethical principles because it is part of the normal quality improvement cycle

14. The action research cycle is

- (a) Action, planning, analysis and conclusion
- (b) Planning, action, conclusion and analysis
- (c) Planning, action, analysis and conclusion
- (d) Analysis, planning, action, and conclusion

15. Reduce gaps between academic research findings and practical applications.

- (a) True
- (b) False

Quiz 2 (Historical Research)

1. Historical research is conducted for which of the following reasons?

- (a) To identify the relationship that the past has to the present
- (b) To evaluate and record accomplishments of individuals or entities
- (c) To enhance understanding of the culture in which we live
- (d) To uncover the unknown
- (e) All of the above

2. In historical research, a primary source _____.

- (a) Consists of first-hand accounts by witnesses to events
- (b) Can consist of sources that include original maps, diaries, transcripts of the minutes of a meeting, and photographs
- (c) Both a and b

3. In historical research secondary sources are _____.

- (a) Generally considered more useful than primary sources
- (b) Generally considered less useful than primary sources
- (c) Generally considered equal to primary resources

4. A researcher was interested in studying why the “new math” of the 1960s failed. She interviews several teachers who used the new math during the 1960s. These teachers are considered:

- (a) Primary sources
- (b) Secondary Sources
- (c) External critics
- (d) Internal critics

5. The process of dealing with concerns over the authenticity of a source is referred to as:

- (a) Sourcing
- (b) Internal criticism
- (c) Secondary criticism
- (d) External criticism

6. The variable that is stable and unaffected by the other variables you are trying to measure is known as variable.

- (a) independent
- (b) dependent
- (c) intervening
- (d) extraneous

7. The variable refers to the condition of an experiment that is systematically manipulated by the investigator. It is the presumed cause.

- (a) independent
- (b) dependent
- (c) intervening
- (d) extraneous

8. The variable that depends on other factors that are measured. These variables are expected to change as a result of experimental manipulation of the independent variable or variables. It is the presumed effect.

- (a) independent
- (b) dependent
- (c) intervening
- (d) extraneous

9. The depth of any research is judged by its.....?

- (a) Title
- (b) duration
- (c) objectives
- (d) cost

10. Action-research can be understood as a/an _____

- (a) longitudinal research
- (b) a kind of research carried out to solve a specific problem
- (c) an applied research
- (d) all of the above

11.Which is the method of determining the consistency, logic, and credibility of data?

- (a) external criticism (b) internal criticism (c) interview (d) observation

12. research is designed to obtain pertinent and precise information concerning the existing status of phenomena without making any interference or control over the situation.

- (a) Quasi Experimental (b) Experimental (c) Descriptive (d) Historical

13.First stage of research is.....:

- (a) Identification of research problem (b) Research design
(c) Review of literature (d) Analysis of data

14.The process of collecting and interpreting data about past events or ideas in order to find how they affected the present events and ideas is what we callresearch.

- (a) . descriptive (b) longitudinal (c) action (d) historical

15.Exploring the development of curricula and teaching methods over time can be categorized as research.

- (a) . descriptive (b) longitudinal (c) action (d) historical

Quiz 3 (Descriptive Research)

1. research is designed to obtain pertinent and precise information concerning the existing status of phenomena without making any interference or control over the situation.
(a) Quasi Experimental (b) Experimental (c) Descriptive (d) Historical
2. In descriptive research, the primary data can be obtained through.....
(a) observation (b) direct communication with respondents in one form or another
(c) personal interview (d) All of the above
3. In action research, what is the central goal?
(a) To test hypotheses and identify causal relationships
(b) To generate new ideas and insights
(c) To take action to address a practical problem or issue
(d) To provide a comprehensive description of a phenomenon
4. The conclusion/findings of which type of research cannot be generalized
(a) Fundamental (b) Experimental (c) Descriptive (d) Historical
5. The research which is carried on several time periods is called.....research.
(a) Fundamental (b) qualitative (c) longitudinal (d) descriptive
6. The research which is based on data is calledresearch.
(a) Fundamental (b) qualitative (c) longitudinal (d) descriptive
7. Which of the following is NOT a feature of descriptive research?
(a) It is a fact finding enquiry (b) research has no control over variables
(c) It is based on measurement of quantity (d) It is used for hypothesis testing.
8. First stage of research process is.....
(a) identification of research problem (b) research design
(c) review of literature (d) analysis of date
9. Last stage of research process is.....
(a) report writing (b) research design
(c) review of literature (d) analysis of date
10. A researcher aims to understand the attitudes and perceptions of a specific community towards mental health services. The research which is most suitable for this study is.....research.
(a) Descriptive (b) Experimental (c) developmental (d) Action
11. A researcher conducts a study to determine the prevalence of substance abuse among adolescents in a specific community. The research which is most suitable for this study isresearch.
(a) Developmental (b) Experimental (c) Descriptive (d) Action research
12. Jean Piaget's theory that describes the cognitive development in children istheory
(a) Stage (b) Cognition (c) socio-cultural (d) psych-sexual

13. Developmental research is primarily focused on.....

- (a) The development of motor skills (b) The changes that occur as a person develops
(c) The similarities between age groups (d) The difference between age groups

14. Dr. Badran told you that he is conducting cross-sectional developmental research that involves elementary school children. What can you accurately say about Badran's study?

- (a) Badran will study the same group of elementary school children over time
(b) Badran will need to include many different elementary schools in this study
(c) Badran is using a ready-made way to determine changes over time
(d) Badran's study will include samples from different age groups of elementary school children

15. Dr. Bishbishy designed a study in which the same participants will return to her lab every two years for ten years. What kind of study did she design?

- (a) Longitudinal (b) Cross-sectional
(c) Both longitudinal and cross-sectional (d) Neither longitudinal nor cross-sectional

16. Dr. Quora is conducting a study to examine how lack of sleep affects college students' achievement. In the above study, the college students' achievement is said to be thevariable.

- (a) dependent (b) independent (c) extraneous (d) intervening

17. In the above study, the amount of sleep is said to be thevariable.

- (a) dependent (b) independent (c) extraneous (d) intervening

18. An Independent variable can be defined as a/an _____ variable.

- (a) Outcome/effect (b) change (c) confounding (d) extraneous

19. Which of the following are features of the qualitative research paradigm?

(a) The research is concerned with understanding the social phenomena from the participant's perspective.

(b) It seeks to establish relationships, among variables and explains the cause of changes in measured social facts.

(c) It is conducted in actual settings as the direct source of data and the researcher is the key instrument.

(d) It is concerned with the process rather than simply with outcomes or products. (e) It attempts to establish universal context free generalization

- 1) a, c and d only 2) b, c and d only 3) a, b and c only 4) c, d and e only

20. Arrange the steps of doing historical research in its right order:

- (1) Isolate the problem, (2) Collect source materials, (3) Evaluate source materials,
(4) formulate hypotheses, (5) Report and interpret findings

- (a) (1), (4), (2), (3), (5) (b) (2), (1), (3), (4), (5)
(c) (1), (2), (3), (4), (5) (d) (3), (1), (2), (4), (5)

Quiz 4 (case & correlational)

1. A detailed study of a specific subject, such as a person, group, place, event, organization, or phenomenon is known asstudy.
(a) case (b) historical (c) correlational (d) experimental
2. A case study research design usually involves methods.
(a) Only qualitative (b) Only quantitative (c) both (a) & (b) (d) neither (a) nor (b)
3. A researcher who conducts interviews or observes students from a distance to understand how they behave in a social environment and how they react to situations around them is doingresearch.
(a) historical (b) field (c) correlational (d) experimental
4. Which of the following is not a field research method?
(a) Direct Observation (b) Survey (c) Ethnography (d) Case Study
5. Case studies are particularly vulnerable to.....
(a) subjectivity (b) neutrality (c) objectivity (d) none of the previous
6. Piaget's studies of cognitive growth in children fall under theresearch.
(a) Developmental (b) Case Study (c) Ethnography (d) both (a) & (b)
7. Case studies tend to examine.....
(a) a small number of variables across a large sample of units
(b) a large number of variables across a small sample of units
(c) a large number of units across a small number of variables and conditions
(d) a small number of units across a large number of variables and conditions
8. Historical research depends upon data observed by
(a) others (b) the investigator (c) authorized sources (d) none of these
9. A report of test score results in a school district is a type of research called.....
(a) historical (b) action (c) descriptive (d) case Study
10. Trend studies designed to establish patterns of change in the past in order to predict future patterns or conditions are a type of research called.....
(a) historical (b) developmental (c) descriptive (d) case Study
11. A strength of correlational designs is that they:
(a) can demonstrate causation
(b) do not require ethics board approval
(c) can be used with variables which cannot be manipulated by a researcher
(d) are more intrusive than experimental designs
12. A researcher uses an experimental design to study the effect of music on memory. In this experiment, the Independent Variable is:
(a) music (b) memory
(c) both music and memory (d) neither music nor memory

13.The goal of correlational research is to:

- (a) assess the causal impact of one variable on another
- (b) create a snapshot of what's happening
- (c) assess relationships between variables
- (d) all of the previous

14.If income and happiness are positively correlated, a person with a low income would be predicted to be:

- (a) not depressed at all
- (b) less depressed than a person with a high income
- (c) more depressed than a person with a high income
- (d) cannot make a prediction from correlational data

15.Data from a correlational study is usually shown as a:

- (a) scatterplot
- (b) pie chart
- (c) bar graph
- (d) b or c

16.Correlation coefficients range from:

- (a) $r = -1$ to $r = +1$
- (b) $r = 0$ to $r = +1$
- (c) $r = -1$ to $r = 0$
- (d) $r = +.5$ to $r = +1$

17.Research shows that the older a person is, the larger their vocabulary. This is an example of a :

- (a) positive correlation
- (b) negative correlation
- (c) causal correlation
- (d) partial correlation

18.Dr. AlSheikh questioned a group of 9th graders about their career aspirations. This is an example of a(n)

- (a) experiment
- (b) survey
- (c) case study
- (d) manipulation

19.Generalization is a key issue in:

- (a) internal validity
- (b) external validity
- (c) a double-blind experiment
- (d) a single-blind experiment

20.In an experiment the researcher manipulates the ____ variable and measure the ____ variable.

- (a) independent, dependent
- (b) dependent, independent
- (c) causal, spurious
- (d) spurious, causal

Quiz 5 (Causal comparative & experimental Research)

1. Action-research can be understood as _____
a. A longitudinal research
b. An applied research
c. A kind of research being carried out to solve a specific problem
d. All of the above
2. Which type of research whose conclusions/findings cannot be generalized to other situations?
a. Casual Comparative Research
b. Descriptive Research
c. Historical Research
d. Experimental Research
3. The data in the causal comparative research are collected..... all the events of interest have occurred.
a. before
b. after
c. during
d. through
4. The type of research in which the researcher observes some existing consequences and searches back through the data for plausible underlying factors is called.....research.
a. casual comparative
b. historical
c. descriptive
d. action
5. Researchers use research to achieve research goals by comparing two variables that represent two groups.
a. casual comparative
b. historical
c. descriptive
d. action
6. Which of the following statements is considered a weakness of causal comparative research?
a. It can examine variables that should not be manipulated as the event under study has already occurred.
b. It helps to build stronger hypotheses about causes and effects, which can then be tested.
c. The independent variables in the causal comparative research cannot be controlled.
d. It identifies how different groups are affected by the same circumstance.
7. Which of the following statements is considered a point of strength of causal comparative research?
a. Can be time-consuming and often requires a lot of data collection.
b. Can examine variables that should not be manipulated as the event under study has already occurred.
c. Lack of a manipulation of variables and a lack of randomization.
d. Subject-selection bias may be unavoidable.
8. This type of research is intended to be carried out by any professional, in any type of school, to investigate a problem. The findings are limited in their generalizability.
a. Casual Comparative Research
b. Descriptive Research
c. Action Research
d. Experimental Research
9. This type of research is intended to determine the cause for or the consequences of differences between groups of people.
a. Casual Comparative Research
b. Descriptive Research
c. Action Research
d. Experimental Research

10. A characteristic of causal-comparative research that distinguishes it from experimental research is that in causal-comparative research.....

- a. the researcher manipulates the independent variable.
- b. one variable can be isolated as the cause for changes in other variables.
- c. extraneous variables are statistically controlled.
- d. existing groups are studied.

11. Which of the following research questions would almost certainly be studied with causal-comparative research?

- a. Do instructor-provided notes lead to higher achievement than student-constructed notes?
- b. Are three-year-old boys more likely to exhibit aggressive behaviors than three-year-old girls?
- c. Is mathematics achievement related to spatial reasoning aptitude?
- d. What proportion of school district superintendents support school choice?

12. Which of the following is a method for controlling the subject characteristics threat in causal-comparative research?

- a. matching subjects in the groups
- b. randomizing subjects to conditions
- c. varying the baseline interval for each group
- d. counterbalancing the groups

13. Which of the following is not a type of causal-comparative research?

- a. exploration of effects caused by group membership
- b. exploration of causes of group membership
- c. exploration of the consequences of an intervention
- d. exploration of factors underlying a set of variables

14. 14. Which of the following is not a similarity between causal-comparative and correlational research?

- a. They are examples of associational research.
- b. They provide guidance for subsequent experimental studies.
- c. They permit the manipulation of variables by the researcher.
- d. They attempt to explain phenomena.

15. What is one weakness of causal-comparative research?

- a. it cannot provide guidance for subsequent experimental studies.
- b. It allows for the exploration of effects caused by membership in a given group.
- c. It allows for exploration of causes of group membership.
- d. Its inability to manipulate the independent variable.

16. In causal-comparative research, investigators attempt to determine

- a. the changes in behavior an individual exhibits after exposure to an intervention or treatment of some sort.
- b. our understanding of important phenomena through large scale surveys.
- c. the causes or consequences of differences that already exist between or among groups of individuals.
- d. prediction equations.

17. One major purpose of correlational research is

- a. to study the changes in behavior an individual exhibits after exposure to an intervention or treatment of some sort.
- b. to clarify our understanding of important phenomena through the identification of relationships.
- c. to make people aware of what has happened from past failures or accomplishments.
- d. to assess attitudes and opinions.

18. Experimental research is the only type of research that enables researchers to make conclusions about.....

- a. group differences.
- b. relationships among variables.
- c. the change of variables over time.
- d. cause and effect

19. The major characteristic of experimental research, which distinguishes it from all other types of research, is that researchers.....

- a. spend money and time in their research.
- b. manipulate the independent variable.
- c. manipulate the dependent variable.
- d. there is no major characteristic that distinguishes it from all other types of research.

20. A/An is the method of data collection designed to test hypotheses under controlled conditions is called.....

- a. survey
- b. experiment
- c. project
- d. questionnaire

21. The group that receives the experimental treatment condition is the..... group.

- a. experimental
- b. control
- c. participant
- d. independent

22. The type of research whose purpose is to study intensively the background, current status, and environmental interactions of a given social unit is called..... research.

- a. case and field
- b. action
- c. descriptive
- d. historical

23. The type of research whose purpose is to investigate the extent to which variations in one factor correspond with variations in one or more other factors is called.....

- a. action
- b. quasi experimental
- c. descriptive
- d. correlational

24. Which of the following is characteristic of action research?

- a. Variables are tightly controlled
- b. Results are generalizable.
- c. Results demonstrate cause-and-effect relationships.
- d. Data are usually qualitative.

25. A teacher conducts an action research study of the problem-solving methods used by students in one of her English classes. Which of the following can she assume on the basis of her study?

- a. Results apply to her students only in the English class she teaches.
- b. Results apply only to students in all her English classes at school.
- c. Results apply only to students in all English classes at the school.
- d. Results apply to all English classes.

- 26. The type of research whose purpose is to develop new skills or new approaches and to solve problems with direct application to the classroom or other applied setting is called.....**
a. action b. quasi experimental c. descriptive d. correlational
- 27. 27. The research design in which the experimenter has complete control over the who, what, when, where, and how of the experiment is called.....**
a. experimental b. quasi experimental c. descriptive d. correlational
- 28. In experimental designs, a/anvariable is a variable that changes so that researchers can observe downstream effects of that change.**
a. extraneous b. independent c. dependent d. intervening
- 29. In experimental designs, a/anvariable is a responding variable that changes based upon input values from an independent variable.**
a. extraneous b. independent c. dependent d. intervening
- 30. The confidence the researcher has that the causality in the study is not due to outside factors is called.....**
a. face validity b. internal validity c. reliability d. external validit

Research Dichotomies

Variables

1. **Dependent Variables** What are being measured in the study of the experiment .
2. **Independent Variables** What the researcher is changing in the study of the experiment & affected by the change. (manipulated)
3. **Extraneous Variables** Variables which used in the experiment & affect the results , but are kept hidden.
4. **Intervening variables** Variables that are used in order to explain the relationships between two variables.

Independent Vs Dependent Variables	
Independent	Dependent
An independent variable is the factor in an experiment that the researcher intentionally manipulates or changes to observe its effect. It's considered the cause or reason for an observed effect. Any changes in the dependent variable are hypothesized to be directly caused by variations in the independent variable.	The dependent variable is what the researcher measures to see if it changes as a result of the manipulation of the independent variable. It represents the outcome or effect in an experiment. Changes in the dependent variable are considered to be dependent on variations in the independent variable.

Extraneous Variable	
Definition	Examples
An extraneous variable is any variable other than the Independent variable that may affect the outcome of an experiment, potentially introducing error. It can confound results if not controlled, leading to misleading conclusions. Researchers try to identify and control these variables to ensure the validity of their findings.	<ul style="list-style-type: none">- Time of Day: If testing cognitive abilities, performance might differ in the morning versus the evening.- Temperature: When studying plant growth, unexpected temperature fluctuations can influence results.- Participant Mood: A participant's mood can affect their responses in an experiment.

Intervening Variables

Intervening variables are hypothetical internal states that are used to explain relationships between observed variables, such independent and dependent variables.

Intervening variables are not real things. They are interpretations of observed facts, not facts themselves. But they create the illusion of being facts.

EXAMPLES: learning, memory, motivation, attitude, personality, traits, knowledge, understanding, thinking, expectation, intelligence, intention.

Types of Variables

In Science Experiments

INDEPENDENT VARIABLE

the one factor you change

*presence or
absence of
caffeine*

DEPENDENT VARIABLE

factor you measure in response to change

*number of words
recalled*

CONTROLLED VARIABLES

factors you hold constant

- *caffeine source*
- *caffeine amount*

CONFOUNDING VARIABLES

hidden variables that might affect results

- *time of day*
- *caffeine sensitivity*



Does caffeine affect how many words you remember?

Quantitative Research

Definition:

Research which is Focusing in quantifying collection and analysis of data.

Examples:

surveys closed ended questions like rating or scales , experiments or scientific research .

Advantages

Answer How questions.

As How much or How many ?

Provides more decision making substance confirmation

Data are numbers .

Measure and test statistical analysis.

Disadvantages

More expensive and time consuming .

Quantitative research means collecting and analyzing numerical data to find patterns, relationships or trends . It uses measurable information to draw conclusions or make predictions

Examples of quantitative research in Educational process

1 - surveys and questionnaires: gathering numerical data from students, teachers or parents to understand educational experience.

2- Attendance and dropout Rates : Quantifying attendance and reasons for dropout to identify trends.

3- GPA Analysis: studying group point averages to assess academic performance and trends

Quantitative offers many advantages including:

1 - objective data : It provides numerical data reducing personal bias and promoting objectivity.

2 - statistical analysis: rigorous statistical analysis enables researchers to identify patterns, trends and relationships within the data

Disadvantages

1-lack of depth (miss the human experience and behaviors)

2- limited exploration (may not capture unexpected insights due to structured nature)

3- subjectivity in measurement (may complex concepts leading to subjective interpretations)

Qualitative Research

Definition - it is the process which focuses in why rather How.

Examples interviews one to one, Focus groups and surveys Open ended questions .

Advantages:

- Answer why questions.
- Data are observed through grouping and non statistical analysis.
- Enable flexible discourse

Disadvantages

- relatively small numbers.

Examples of qualitative research:

Focus Group Discussions with Students: Organizing focus groups with students to discuss their learning experiences, preferences, and opinions on educational approaches.

Qualitative research is a method of inquiry that explores and interprets people's experiences, opinions, and behaviors in-depth, using non-numerical data such as interviews, observations, or open-ended surveys. It focuses on understanding the underlying meanings and context rather than statistical analysis.

Content Analysis of Student Work:

Analyzing students' assignments, projects, or written reflections to identify patterns, themes, and the depth of their understanding in a particular subject.

Qualitative research can be subjective, time-consuming, and challenging to generalize findings. It may lack statistical rigor and face issues of researcher bias, limiting the scope and replicability of the study Advantages of qualitative research offers a deep understanding of human experiences and behaviors, captures context, allows for flexible exploration, and generates rich, nuanced data that can uncover unexpected insights.

Primary Sources

Definition:

The original documents of the research like diaries and interviews

Examples:

diaries , interviews, speeches , scientific data and reports

Advantages:

can provide you a unique and original insights that may not be available from other sources.

Disadvantages:

Time consuming , costly Labor intensive to collect and analyze .

Secondary Sources

Definition:

Works that summarize primary sources like reviews , books and magazines (second hand)

Examples:

journal articles, textbooks, dictionaries ,biographies and political commentary

Advantages:

-provide a variety of expert perspectives and insights

-It offers a quick easy introduction to your topic.

Disadvantages:

-secondary sources are not necessarily focused on your specific topic , you may able to dig to find applicable information.

Reliability:

The extent to which the outcomes are consistent when the experiment is repeated more than once

Validity:

The extent to which the instruments in the experiments measure exactly what you want them to measure.

Internal validity:

Examines whether the study design & analysis answers the questions without bias .

External Validity:

Examines whether the study findings can be generalized to other context.

Placebo Effect

- The placebo effect is when a person's physical or mental health appears to improve after taking a placebo or 'dummy' treatment.
- Placebo is Latin for 'I will please' and refers to a treatment that appears real, but is designed to have no therapeutic benefit.

Hawthorne Effect

- The Hawthorne effect occurs when a participant's behaviour changes as a result of being observed, rather than as a result of an intervention.
- For example when a group of people worked in a hospital the productivity of their work will be developed due to observation rather than not being watched

Directional Hypothesis

- The relationship between variable A and variable B (positive correlation). The word hypothesis is a Greek word means to guess.

Examples :

- Study time and grades: increasing the amount of time is expected to improve test scores among students .
- Sunlight and plant growth:
- Exposing plants to more sunlight promoting their growth and development.
- Caffeine is linked to increase in activity .

Directional Hypothesis

Advantages:

- direction is specified
- One tailed hypothesis
- Specifies existence also relationships

Disadvantages:

there is no power to detect an effect in the opposite direction .

Null Directional Hypothesis

- No relationship between variable A and variable B (negative correlation).
- The word hypothesis is a Greek word means to guess

Null Directional Hypothesis

Advantages:

Most valuable hypothesis for the scientific method because it is the easiest to test using statistical analysis.

Disadvantages:

Always false , direction is not specified positive or negative , only predicts the existence, two tailed hypothesis and Commonly misunderstood .

Dr. Eman

The importance of ethical research writing:

- 1) **Trustworthiness:** Ethical research makes your work more trustworthy and dependable.
- 2) **Honesty:** It maintains honesty in the research process, ensuring accurate representation.
- 3) **Respect for People:** Ethical writing respects the people involved in the study, obtaining their permission and safeguarding their rights.
- 4) **Quality Standards:** Following ethical guidelines ensures that your research meets high-quality standards for publication.
- 5) **Originality:** Ethical practices prevent plagiarism, promoting originality and giving credit to others.
- 6) **Public Trust:** Ethical research builds trust with the public, showing a commitment to fair and responsible practices.
- 7) **Legal Compliance:** It keeps you in line with legal requirements, protecting both researchers and participants.
- 8) **Peer Review:** Ethical writing supports the peer review process by providing clear and accurate information for assessment.
- 9) **Reputation:** Upholding ethical standards helps build a positive reputation for researchers and institutions.
- 10) **Advancing Knowledge:** Ultimately, ethical research contributes to advancing knowledge responsibly and ethically.

Define the term plagiarism showing why should we avoid it when Publishing scientific research.

Plagiarism:

taking someone else's words, work, or ideas and passing them off as your own, without any attribution to the original creator

Why should we avoid Plagiarism?

1. **Being Honest:** Plagiarism is like copying someone else's work. It's not fair or honest. When you do your own research, you show integrity.
2. **Trust Matters:** In the world of science, people need to trust each other. Plagiarism breaks that trust. If you copy, others won't believe in your findings.
3. **Find Something New:** Research is about discovering new things. If you copy, you're not really adding anything new. It's like cheating yourself and others out of real progress.
4. **Protect Your Reputation:** Plagiarism can ruin your name and the name of your school or organization. It's better to be known for your original work.
5. **Follow the Rules:** Plagiarism is against the rules. You could get in trouble, even legally, because you're using someone else's ideas without permission.
6. **Keep Standards High:** Good research is about doing your best. Copying doesn't meet high standards. It's essential to do your work well and contribute to knowledge.
7. **Learn and Grow:** Doing your own research helps you learn more. It's like a personal journey of discovery, making you smarter and better at what you do.
8. **Publish with Pride:** Journals and publishers want original work. If you copy, your paper might be rejected, and even if it's published, it could be taken back.
9. **Work Together:** Copying stops collaboration. Sharing ideas freely helps everyone grow. Plagiarism blocks this exchange of knowledge.
10. **Get Better:** Doing real research improves your skills. It makes you think more, solve problems, and become a better researcher.

Summarize 10 used to avoid plagiarism:

- 1) **Start Early:** Begin your work early to avoid copying due to time pressure.
- 2) **Cite Correctly:** Give credit by citing your sources correctly.
- 3) **Proofread:** Check your writing for mistakes and to make sure you're not unintentionally copying.
- 4) **Quote:** Use quotation marks when using someone else's words.
- 5) **Paraphrasing:** Rewrite sentences in your own words while still giving credit.
- 6) **Add Value:** Share your own thoughts on the topic, don't just rely on what others say.
- 7) **Plagiarism Checker:** Use tools like Grammarly to check for accidental copying.
- 8) **Reference Page:** Create a well-organized list of your sources at the end of your paper.
- 9) **Consult Your Teacher:** Talk to your teacher to understand the guidelines.
- 10) **Internet Use:** Be careful with online sources, make sure they're legit, provide full info, and avoid using social media content without checking its origin.

Write six common errors in reviewing research literature.

1. Carries out a hurried review of the literature in order to get started on the research project. This usually results in overlooking previous studies containing ideas that would have improved the student's project.
2. Relies too heavily upon secondary sources.
3. Concentrates on research findings when reading research articles, thus overlooking valuable information on methods, measures, and so forth.
4. Overlooks sources other than education journals, such as newspapers and popular magazines which often contain articles on educational topics.
5. Fails to define satisfactorily the topic limits of his review of the literature. Searching too broad an area often leads to the student's becoming discouraged or doing a slipshod job. Searching too narrow an area causes him to overlook many articles that are peripheral to his research topic but contain information that would help him design a better study.
6. Copies bibliographic data incorrectly and is then unable to locate the reference needed.
7. Copies far too much material onto note cards. This often indicates that the student does not have a clear understanding of his project and thus cannot separate important from unimportant information.

Write five issues in designing a research and errors in gathering research Data.

1. Pays insufficient attention to establishing and maintaining rapport with his subjects. This often leads to refusals to cooperate or to a negative attitude that can reduce the validity of tests and other measures.
2. Weakens his research design by making changes for the administrative convenience of the schools from which he draws his subjects.
3. Fails to explain the purposes of measures used in the research to teachers and administrators. If a teacher thinks a test or measure is silly or worthless, her attitude is quickly sensed by pupils and leads to poor cooperation.
4. Fails to evaluate available measures thoroughly before selecting those to be used in his research. This often leads to the use of invalid or inappropriate measures.
5. Selects measures to use in his research of such low reliability that true differences are hidden by the errors of the measure.
6. Selects measures to use in his research that he is not qualified to administer and score.

Content analysis

Content analysis is a research method used to identify patterns in recorded communication. To conduct content analysis, you systematically collect data from a set of text which can be written or visual.

- _ Books, newspapers & magazines.
- _ Speeches & interviews.
- _ Web content & social media posts.
- _ Photographs & films.

Content analysis can be both qualitative and quantitative. In both types you categorize or code words, themes, concepts within the text then analyze the results.

What is content analysis used for?

To obtain a broader knowledge about the examined field of study.

The process of content analysis:

Content analysis is a process of 4, Cs.

"Coding, categorizing, comparing & conducting".

Coding is used to reduce or simplify data.

To attach information together or connect them to be understood.

Categorization refers to develop the meaningful categories into words, phrases & sentences as units of analysis to be grouped.

Comparing means making connections between categories.

Conducting means drawing theoretical consideration in the base of the text and the result of the analysis.

Features of the process of content analysis:

- 1- Breaking down texts into units of analysis.
- 2- Understanding statistical analysis of the units.
- 3- Presenting the analysis.

Steps of content analysis:

- 1- Theory and rationale which is about answers to the questions such as why it will be analyzed, what research questions are.
- 2- Conceptualization for defining the variables.
- 3- Operationalization for determine units of data collection as well as measurement of internal validity.
- 4- Coding scheme which is both human and computer coding " creating a code book" conducting all the explanations of all variables.
- 5- Sampling which is done by different subset, e.g. by issues, by pages.

Text characteristics in content analysis:

Potential concerns, Subjective components, Reliability & Repeated validity.

They are 3 types of units in content analysis:

(Sampling - Recording - Context)

Advantages of content analysis:

- 1- It's applied directly to the text, the products of human communication which is the core of social interaction.
- 2- High quality studies can be both qualitative or quantitative to go on effective way to ensure the validity and reliability of the research.
- 3- Documents of different kinds provide a reliable source of information for a long period of time.

Apply content analysis in FL textbooks evaluate the main objectives of the present study as following:

- 1- To learn about the diversity of the issues investigated in FL textbooks.
 - 2- To find out whether content analysis is supplemented by other methods of research.
 - 3- To learn about selected aspects of research methodology applied in the studies.
- Ex:** Sampling units of analysis checklists categories with regard to the research aims.