

THE UNITED REPUBLIC OF TANZANIA
NATIONAL EXAMINATIONS COUNCIL OF TANZANIA
DIPLOMA IN SECONDARY EDUCATION EXAMINATION
762 EDUCATIONAL RESEARCH, MEASUREMENT AND EVALUATION

Time: 3 Hours

ANSWERS

Year: 2008

Instructions

1. This paper consists of section A and B.
2. Answer all questions in section A, and four questions from section B.



1. Define the term research

Research is a systematic investigation aimed at discovering new information, verifying existing knowledge, or solving specific problems using structured methods of inquiry.

2. Mention four characteristics of a good hypothesis of a research

A good hypothesis should be clear and specific, testable through observation or experimentation, based on existing theories or logical reasoning, and concise to ensure focus and clarity.

3. Why is a research proposal important?

A research proposal is important because it outlines the plan for a study, helping to clarify objectives, secure approval or funding, refine methodology, and ensure feasibility before conducting the actual research.

4. State four functions of a research instrument try-out

A research instrument try-out helps in detecting errors in the tool, improving clarity of questions, ensuring reliability and validity of the instrument, and refining data collection procedures for better accuracy.

5. Enumerate three advantages of using an interview as a method of data collection

Interviews provide in-depth and detailed responses, allow for immediate clarification of questions, and have a higher response rate compared to written surveys.

6. List down four reasons for doing a literature review

A literature review helps in identifying gaps in existing research, providing a theoretical framework, preventing duplication of previous studies, and supporting the justification and significance of the research.

7. Mention four qualities of a test item

A good test item should be clear and easily understood, valid in measuring what it intends to assess, reliable in producing consistent results, and fair without bias against any group.

8. Mention and explain briefly four levels of Bloom's Taxonomy of Educational Objectives

Knowledge involves recalling facts and basic concepts. Comprehension requires understanding and explaining ideas. Application refers to using knowledge in new situations. Analysis involves breaking down information into parts and understanding relationships.

9. Give two advantages of using standard deviation as a measure of variability

Standard deviation provides an accurate measure of data dispersion around the mean and helps in comparing the consistency of different datasets.

10. Differentiate measures of central tendency from measures of dispersion

Measures of central tendency, such as mean, median, and mode, describe the center of a dataset, while measures of dispersion, such as range, variance, and standard deviation, describe how spread out the data is.

11. Differentiate measures of central tendency from measures of dispersion.

Measures of central tendency refer to statistical values that indicate the center of a dataset. The most common measures are the mean, median, and mode. These values help summarize a large amount of data by providing a single representative number that describes the general trend.

Measures of dispersion, on the other hand, describe how spread out or varied the data is. These include the range, variance, and standard deviation. Dispersion measures are important because they provide insight into the consistency or variability of the dataset, helping to determine whether the data points are closely grouped or widely scattered.

12. Discuss four steps of writing a research report.

The first step in writing a research report is the preliminary section, which includes the title page, abstract, table of contents, and acknowledgments. This section provides an overview of the report and gives readers a quick summary of what to expect.

The second step is the main body, which consists of key sections such as the introduction, literature review, methodology, results, and discussion. This is the core part of the report, where the researcher presents the background, findings, and interpretation of the study.

The third step is the references section, where all the sources cited in the research are listed in an appropriate citation style, such as APA, MLA, or Chicago. Proper referencing ensures academic integrity and gives credit to previous research.

The fourth step is the appendices, which include supplementary materials such as raw data, questionnaires, or interview transcripts. These materials provide additional details that support the study but are not included in the main body.

13. True-false test items have been criticized for their inability to measure higher levels of the cognitive domain.

(a) Discuss the limitations of true-false test items.

True-false test items are often criticized for their inability to assess deep understanding or critical thinking. They mainly test basic recall and recognition rather than analytical or problem-solving skills.

Another limitation is that students have a 50% chance of guessing the correct answer, making it less reliable in assessing actual knowledge. This increases the likelihood of students receiving a score that does not accurately reflect their understanding.

True-false questions also provide little diagnostic information, meaning they do not indicate why a student got an answer wrong or which part of the concept they misunderstood. This makes it difficult for instructors to identify learning gaps.

Additionally, true-false items can be misleading if statements are too vague or absolute. Words like "always" or "never" may make a statement false, even if it is mostly true, which can confuse students and lead to inaccurate assessments.

(b) Give four suggestions on how to construct good true-false test items.

One way to construct good true-false items is to ensure that each statement is clear and unambiguous. Avoiding overly complex wording or multiple ideas in a single statement helps to maintain clarity.

Another important aspect is to balance the number of true and false statements to prevent students from guessing patterns. A roughly equal distribution makes the test more fair and reliable.

Avoid using absolute terms like "always" and "never" unless they are clearly justified. Such words can make a statement too easy to determine as true or false, reducing the effectiveness of the test.

Lastly, statements should be based on factual and verifiable information rather than opinions or generalizations. Ensuring that all items are grounded in the content being assessed improves the accuracy of the test.

14. Briefly discuss the characteristics of standardized tests.

Standardized tests have a uniform administration process, meaning they are given under the same conditions to all test-takers. This ensures fairness and comparability of results.

These tests follow a structured scoring system, often using multiple-choice or other objective grading methods. This eliminates subjective judgment and provides consistency in evaluation.

Reliability is another key characteristic, as standardized tests are designed to produce consistent results when administered to different groups at different times. A reliable test ensures that performance is measured accurately.

Standardized tests are also validated to ensure that they measure what they intend to assess. Validity ensures that the test results are meaningful and accurately reflect students' knowledge or skills.

(b) Criteria for standardized tests to function appropriately.

A standardized test should have well-defined objectives that align with the intended learning outcomes. This ensures that the test accurately measures what students are expected to learn.

Fairness is essential in standardized tests, meaning they should not contain cultural, language, or socio-economic biases. This allows all test-takers to have an equal opportunity to demonstrate their abilities.

Reliability must be maintained so that results are consistent across different administrations of the test. A test should yield similar results for students with the same level of knowledge or skill.

Validity is crucial in ensuring that the test assesses what it is supposed to. If a test claims to measure mathematical ability, for example, it should not rely on unnecessary reading comprehension skills that could disadvantage some students.

15. Discuss the first five elements of a research proposal.

The first element of a research proposal is the title, which should be clear, concise, and relevant to the study. A well-structured title helps readers understand the research focus at a glance.

The second element is the introduction, which provides background information on the topic and explains the significance of the study. It also outlines the research problem and objectives, giving context to why the study is important.

The third element is the problem statement, which clearly defines the specific issue the research seeks to address. This section includes research questions or hypotheses that guide the study's direction.

The fourth element is the literature review, which summarizes previous research on the topic. This section identifies gaps in existing knowledge, provides theoretical support, and justifies why the study is necessary.

The fifth element is the methodology, which describes the research design, data collection techniques, and analysis procedures. This section ensures that the research is conducted systematically and can be replicated by others.

16. “A researcher believes that a thorough review of written material in the proposed topic of study is essential if the researcher is to design a relevant, original, useful, and timely research study.” Discuss how the review of literature is useful at various stages of research.

A literature review is essential in the early stages of research because it helps identify gaps in existing knowledge. By reviewing past studies, a researcher can ensure that their study addresses a unique or unresolved issue, making it relevant and original.

During the research proposal phase, a literature review provides theoretical support and justification for the study. It helps in refining research questions and developing hypotheses based on previous findings.

In the methodology stage, reviewing literature allows researchers to choose appropriate research designs and data collection methods. Learning from past studies helps avoid common mistakes and improves the overall research process.

During data analysis and discussion, a literature review provides a basis for comparing findings with previous research. This helps in validating results and understanding how new findings contribute to the broader field.

Finally, in the conclusion and recommendations stage, a literature review supports the interpretation of results and helps suggest areas for future research. By understanding past studies, researchers can provide more informed recommendations for further investigations.