AFRICA
UNIVERSITY
(A United Methodist-Related Institution)
Investing in Africa's Future
Faculty of Education

FIRST SEMESTER 2011/2012 MAIN EXAMINATION MARKING GUIDES.

COURSE CODE	**ECI 304**
COURSE TITLE	**Research Methods**
GROUP	**3rd Years/4year Programme**
EXAMINER	**Mr. R. Makoni**
DATE	**November, 2011**
DURATION	**3 Hours**
INSTRUCTIONS	**1.Answer ALL Questions** **2. Write your student number on each page.** **3. All responses should be written in the spaces provided.**

1. Give **four** reasons why we carry out research in education.

- Educational research is conducted for a variety of reasons- to explain, describe, predict, control, improve.

(4marks)

2. Identify **three** sources of educational research.

- Classrooms, labs, homes, the community, on the streets

(3marks)

3. Give two examples of subject completed research instruments.

- questionnaires, tests, self-checklists, attitude scales (2marks)

4. A researcher is interested in the effects of drugs on human beings. He/she asks the administrator of a children's home to participate in an experiment. The administrator assigns a number of these children to

participate in the experiment but does not tell them what it is all about. The children are injected with a number of drugs whose effects are unknown.

Explain the ethical problems in such kind of research.

- Candidates to stress that research has to be conducted in an ethical manner.
- Participants should be protected from physical or psychological harm, discomfort or danger that may arise due to research procedures.
- Any research that is likely to cause lasting or even serious harm or discomfort to any participant should not be conducted.
- This research has no informed consent on the part of the children who are the participants-participants should be fully informed of the dangers involved.
- Ethical research is done in such a way that participants are protected from harm including vulnerable groups.
- Candidates to cite specific examples from the passage to illustrate key points.

(6marks).

5. Briefly explain the difference between a dependent and an independent variable

- A dependent variable shows the effect of manipulating or introducing the independent variables.
- In other words, the variation in the dependent variable depends on the variation in the independent variable.
- Independent variables are those that the researcher has control over.
- This "control" may involve manipulating existing variables.
- Whatever the case may be, the researcher expects that the independent variable(s) will have some effect on (or relationship with) the dependent variables.
- In an experiment, the independent variable is the variable that varies or manipulated by the researcher and the dependent variable is the response to be measured.
- An independent variable is the presumed cause whereas the dependent variable is the presumed effect

(6marks).

6. Outline **four** characteristics of a good hypothesis.

- A good hypothesis is based on sound reasoning
- A good hypothesis provides a reasonable explanation for the predicted outcome.
- A good hypothesis clearly states the relationship between the defined variables.
- A good hypothesis defines the variables in easy to measure terms.
- A good hypothesis is testable in a reasonable amount of time.

(4marks).

7. Identify a research problem and

- Candidates to suggest any reasonable research problem and develop the null and alternative hypotheses eg An investigation into the performance of girls and boys in Music at A level

- State its null hypothesis (2marks)

- There is no difference in the performance of girls and boys in Music at A level.

- (ii) State its alternative hypothesis (2marks)
- Boys perform better than girls in Music at A level (2marks).

8. Indicate the appropriate research design for each of the following cases:

(i). the culture of the Shona people

- Ethnography (1mark)

(ii). the effectiveness of three teaching methods

- Experimental (1mark)

(iii). feelings of homeless people

- Phenomenology (1mark)

(iv).George's academic record

- Case study (1mark)

9. Data are……..
A. Instruments used by researchers to collect information from the subjects
B. Kinds of information researchers obtain on the subjects of their research
C. Researcher completed instruments
D. Subject completed instruments.

10. What is sampling?
A. A process of selecting participants for a research project
B. A portion of the elements in a population
C. A process of assigning participants to various roles in a research project
D. A process of selecting the experimental group in a research project.

11. Which one of the following best describes probability sampling:
A. When all elements in a population are included in a sample
B. When a portion of the sample is included in a sample
C. Random sampling
D. When hierarchical groups are selected from a sample frame

12. Sources of knowing in research include
A. Context codes, process codes and response codes
B. Case study, correlation, and analysis of variance
C. Logic, expert opinion and sensory experience
D. Pattern matching, representativeness check and coding check.

13. Random selection is…..
A. A technique that provides each population an equal opportunity of being included in the sample

B. Is when you select elements on the basis of categories assumed to exist within a population
C. Selection based on the availability or ease of inclusion
D. Any procedure in which elements have equal chances of being included into the sample.

14. What distinguishes qualitative research from quantitative research?

- Qualitative research typically entails in-depth analysis of relatively few subjects for which a rich set of data is collected and organized.
- Quantitative research entails the proper application of statistics to typically a large number of subjects.
- Quantitative and qualitative research methods differ primarily in:
- their analytical objectives
- the types of questions they pose
- the types of data collection instruments they use
- the forms of data they produce
- the degree of flexibility built into study design
- Qualitative research is a system of inquiry which seeks to build a holistic, largely narrative, description to inform the researcher's understanding of a social or cultural phenomenon.
- Qualitative research takes place in natural settings employing a combination of observations, interviews, and document reviews
- Qualitative- holistic, subjective, inductive, analytical,
- Quantitative- deductive, objective, numerical or statistical

(10marks)

15. Briefly describe **three** factors to be considered in testing the feasibility of the research problem.

- The first step of a research process is to identify a research problem
- Research originates from a need that arises
- A number of questions can guide feasibility of the research eg Is the problem of current interest?
- Is there evidence or authoritative opinion from others to support the need for this research?
- Will more information about the problem have a theoretical and practical value
- Would research findings lead to the some useful change in best practice?
- Will the study substantially revise or extend existing knowledge?

(6marks).

16. Using specific examples drawn from educational research explain the significance of a research design

- good research is like a good argument
- A design can be thought of as an appropriate procedure or guideline for doing something under certain conditions.
- Research design provides the glue that holds the research project together.
- A design is used to structure the research, to show how all of the major parts of the research project -- the samples or groups, measures, treatments or programs, and methods of assignment -- work together to try to address the central research questions.
- The purpose of the research design and methods section is to describe how the research will be carried out.

- This section is critical for demonstrating that the applicant has developed a clear, organized and thoughtful study design.
- Should provide an overview of the proposed design and conceptual framework.
- Study goals should relate to proposed study hypotheses.
- Include details related to specific methodology; explain why the proposed methods are the best to accomplish study goals.
- Describe any novel concepts, approaches, tools or techniques.
- Include details of how data will be collected and results analyzed.
- Consider required statistical techniques.
- Include proposed work plan and timeline.
- Consider and discuss potential limitations and alternative approaches to achieve study aims.

(10marks).

17. Discuss the advantages and disadvantages of using **either** questionnaires or interviews in collecting research data

- ***Questionnaires*** provide efficient data collection, as lots of subjects can be tested relatively quickly and cheaply.
- Can be posited, e-mailed or faxed
- Can cover a large number of people or organizations
- Possible anonymity of respondents
- However, respondents may not complete the questionnaires as instructed or at all and the information collected can be limited.
- Several reminders may be required
- Low response rates
- Design problems
- ***Interviews*** ensure subjects complete the questions as instructed, the interviewer may respond to information provided by the subject and request clarification or additional information and there are lower rejection rates.
- Can get accurate information from respondents
- Good response rate
- Completed immediately
- Can investigate motives and feelings.
- However, the interviewer may inadvertently heighten demand characteristics of reactivity and social desirability or communicate expectancies about the desired response.
- Time consuming
- Transcription and analysis can present problems
- Can be expensive
- Accept any other relevant points.

(15marks).

18. Compute the **mean** and **median** of the following distribution:

13, 18, 13, 14, 13, 16, 14, 21, 13 (2marks).

Mean- 15
Median-14

19. Determine the **mean, median and range** of the following distribution.

88, 86, 85, 80, 77, 75, 71, 65, 60, 58 (3marks).

Mean-74.5
Median-76
Range-30

20. Identify any **five** elements of the research proposal
    - A research proposal is intended to convince the reader that the proposed work is significant, relevant and interesting
    - It has a number of elements including the title/topic, background/rationale, problem statement, hypothesis/research questions, purpose, significance, limitations and delimitations, concept clarifications, literature review and research methodology, timelines, budgets.

(5marks).

21. Define the Scientific Method and briefly explain the major steps in this method.
    - The Scientific method involves a series of steps that are used to investigate natural occurrences.

    - Involves testing ideas in the public arena
    - In its steps: first there is a problem to be identified and investigated
    - The problem is defined more precisely
    - Formulate hypothesis/research questions
    - Observation- Data collection including review of related literature
    - Experiment
    - Data analysis
    - Conclusions- confirm, modify, or reject hypothesis or theory

(6marks).

22. Outline five reasons for conducting educational research

    - Educational research is conducted for several reasons eg to improve practice, to make some predictions, to describe educational systems, to explain, to control etc.
    - Accept any other relevant points.

(5marks).