



MACHAKOS UNIVERSITY

University Examinations for 2024/2025 Academic Year

SCHOOL OF EDUCATION
DEPARTMENT OF EDUCATIONAL COMMUNICATION TECHNOLOGY & ECE
EXAMINATIONS FOR DOCTOR OF PHILOSOPHY IN EDUCATIONAL
COMMUNICATION AND TECHNOLOGY

ECC800: RESEARCH METHODS IN EDUCATION

DATE: 18TH JANUARY, 2025

TIME: 9.00 AM – 12.00 PM

INSTRUCTIONS:

*Answer question **ONE (Compulsory)** and any other **Two** questions*

QUESTION ONE (COMPULSORY) (30 MARKS)

a) Illustrate the meaning of each of the following terms:

- i) Frame
- ii) Population
- iii) Sample
- iv) Stratified Sampling
- v) Snowball Sampling

(10

Marks)

b) Identify One issue in your area of specialization:

- i) Make a brief statement of a possible problem. (4 Marks)
- ii) State TWO objective related to the problem. (4 Marks)
- iii) Suggest a suitable research design you would recommend. (2 Marks)
- iv) Suggest a sampling technique you would use to obtain a suitable sample. (2 Marks)
- v) Describe two research instruments you would use to collect data. (4 Marks)
- vi) Suggest a data analysis technique you would adopt and why? (4 Marks)

QUESTION TWO (15 MARKS)

- a) Clearly explain the difference between the three types of research:
 - i) Exploratory Research. (4 Marks)
 - ii) Descriptive Research. (4 Marks)
 - iii) Causal Research. (4 Marks)
- b) Identify one research issue that can be investigated through each of the three types of research. (3 Marks)

QUESTION THREE (15 MARKS)

- a) Briefly explain the essence of each of the following Qualitative Research Methods:
 - i) Observation.
 - ii) Interview.
 - iii) Focus Group Discussion.
 - iv) Survey. (8 Marks)
- b) Distinguish between the Convergent Parallel Design and the Explanatory Sequential Design. (4 Marks)
- c) Describe how you would implement one of the above designs in your area of specialization. (3 Marks)

QUESTION FOUR (15 MARKS)

- a) Outline and illustrate FIVE ways of identifying a Research Problem. (5 Marks)
- b) Explain the importance of piloting research instruments. (4 Marks)
- c) Discuss any two methods of ensuring the reliability of research instruments. (6 Marks)

QUESTION FIVE (15 MARKS)

- a) Explain the Solomon's Four Non Equivalent Group Design for Quasi-Experimental Research. (5 Marks)
- b) Explain how you would implement this design with reference to a named educational issue. (6 Marks)

- c) Distinguish between the: Triangulation Research Design and The Embedded Research Design. (4 Marks)