# UNIVERSITY OF SWAZILAND

## FACULTY OF EDUCATION
## FINAL EXAMINATION PAPER 2007

TITLE OF PAPER    :    RESEARCH DESIGN AND TECHNIQUES

COURSE NUMBER:    EDC 601   M.ED

TIME ALLOWED   :    THREE (3) HOURS

INSTRUCTIONS    :    1.    ANSWER QUESTION 1 AND ANY <u>THREE</u> QUESTIONS OF YOUR CHOICE.

2.    CHOOSE AT LEAST <u>ONE</u> QUESTION FROM EACH OF THE SECTIONS <u>B</u> AND <u>C</u>.

3.    USE A SEPARATE ANSWER BOOKLET FOR SECTION C.

**THIS PAPER IS NOT TO BE OPENED UNTIL PERMISSION HAS BEEN GRANTED TO DO SO BY THE INVIGILATOR.**

## QUESTION 1 (COMPULSORY)

Table 1 provides information from a study to identify significant variables explaining and predicting "supervision effectiveness" by heads of department in Swaziland primary schools. Using the information provided in Table 1, answer the following questions:

| | |
|---|---|
| 1. What analysis procedure was used in this study? | (1 marks) |
| 2. What was the dependent variable in this study? | (1 marks) |
| 3. List the variables found to explain and predict "supervision effectiveness" | (3 marks) |
| 4. How much cumulative percentage variance was explained by all the variables in this study? | (2 marks) |
| 5. Which one of the variables explained the greatest percentage variance in the dependent variable? | (2 marks) |
| 6. How much percentage variance was explained by the variable "time spent teaching"? | (2 marks) |
| 7. Distinguish between "B" and "$\beta$" | (2 marks) |
| 8. In this study "Adjusted $R^2$ is equal to .64." Explain the meaning of Adjusted $R^2$. | (2 marks) |
| 9. Explain "p≤.04" for the variable, "years of experience in teaching." | (2 marks) |
| 10. Explain the meaning of $R^2_{change}$. | (2 marks) |
| 11. In this study "Standard error was .44." Explain the meaning of Standard error. | (2 marks) |
| 12. Write a prediction model/equation for the findings of the study. | (4 marks) |

[Total: 25 marks]

Table 1

*Significant variables explaining supervision effectiveness by heads of department in Swaziland (Stepwise Regression) N = 81*

| Independent variable | R | $R^2$ | $R^2_{change}$ | B | $\beta$ | t- value | |
|---|---|---|---|---|---|---|---|
| 1. Adequacy of supervision time | .72 | .52 | .52 | .45 | .50 | 5.87 | .0 |
| 2. Heads of department qualities | .76 | .58 | .06 | .31 | .28 | 3.22 | .0 |
| 3. Years of experience in teaching | .78 | .61 | .03 | .03 | .15 | 2.08 | .0 |
| 4. Time spent in non-teaching activities | .80 | .64 | .02 | -.03 | -.21 | -2.87 | .0 |
| 5. Time spent teaching | .81 | .65 | .02 | -.01 | -.15 | -2.12 | .0 |
| Constant = 1.21 | | | | | | | |

p≤.05; Adjusted $R^2$ = .64; Standard error = .44

## SECTION B

**Choose at least <u>one</u> question from this section**

### QUESTION 2

Propose *an ex post facto* study on a topic of your choice. The proposal should include the following sections:
(a) Introduction (2-5 sentences)                                                [2 ma
(b) Problem statement (2-5 sentences)                                           [2 ma
(c) Purpose and objectives ( **one** purpose and not less than **four** objectives)   [6 ma
(d) Relevant literature (not less than **five** citations)                      [5 ma
(e) Methodology: State design, target population and sample, variables to be
    included in the study, establishment of validity and reliability, data collection
    procedures, and data analysis.                                             [10 ma
                                                                    **[Total: 25 ma**

### QUESTION 3

Discuss in detail, with an example for each, when it is appropriate to use each of the following data analysis techniques/procedures in the conduct of research:

    (a) Multicollinearity
    (b) Effect Size
    (c) Chi-square
    (d) $r_s$
    *(e) A priori*
    (f) Dependent t-test
    (g) Type I error
    (h) eta
    (i) One way ANOVA
    (j) Post-hoc analysis procedure

**[Total: 25 marks]**

### QUESTION 4

The major concerns in conducting survey research include "the validity of data collected", and "the generalizability of findings?" Discuss in detail how to address these concerns in collecting data using a survey research method.

**[Total: 25 marks]**

## SECTION C

**Choose at least one question from this section.**

**QUESTION 5**

Explain how data in qualitative research are analysed under the following procedures:

   (a)  deductive analysis
   (b)  inductive analysis

**[Total: 25 Marks]**

**QUESTION 6**

Describe the advantage and disadvantages of qualitative research design as presented in

   (c)  case study
   (d)  ethnographic study

**[Total: 25 marks]**

**QUESTION 7**

Write explanatory notes on the following
   (e)  Gravitating towards the elite
   (f)  Instrument decay
   (g)  Data analysis is a continuous process
   (h)  Purposive sampling
   (i)  Key informants

**[Total: 25 marks]**