UNIVERSITY OF SWAZILA ND

FACULTY OF EDUCATION
FINAL EXAMINATION PAPER 2006

TITLE OF PAPER : RESEARCH DESIGN AND TECHNIQUES

COURS NUMBER : EDF 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 ONE 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)

Given the Null Hypothesis "there is no statistical significant difference on Gross Domestic Product among the regions of the world", use the statistical analysis results print-out below to answer the following questions:

a. What Analysis Procedure[s] was [were] employed in this study? [2 marks]

b. Were the Variances equal or unequal? Justify your answer. [2 marks]

c. Was the Null Hypothesis in this study accepted or rejected? [2 marks]

d. At what Level of Statistical Significance were the results of the study accepted or rejected? [2 marks]

e. Which Post Hoc Multiple Comparison Procedure was used to determine groups that differed significantly? [2 marks]

f. Why was this particular Post Hoc Multiple Comparison Procedure used? [2 marks]

g. Did the researchers choose the appropriate Post Hoc Multiple? Comparison Procedure for the analysis? Justify your answer. [3 marks]

h. Based on the print-out analysis, construct a table showing regions that differed significantly in this study. [6 marks]

i. Draw two conclusions based on this study. [4 marks]

[Total: 25 marks]

One way

Descriptives

Gross domestic product / capita

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximu
					Lower Bound	Upper Bound		
OECD	21	16610.86	3725.97	813.07	14914.82	18306.90	8060	2347
East Europe	14	5159.79	1708.70	456.67	4173.21	6146.36	2340	740t
Pacific/Asia	17	4263.00	6291.05	1525.80	1028.44	7497.56	202	1986(
Africa	19	998.68	1178.26	270.31	430.78	1566.59	122	428:
Middle East	17	4957.41	4057.45	984.08	2871.26	7043.56	748	1419:
Latn America	21	1997.67	1482.12	323.43	1323.01	2672.32	383	695(
Total	109	5859.98	6479.84	620.66	4629.73	7090.23	122	23474

One way

Test of Homogeneity of Variances

Gross domestic product / capita

Levene Statistic	df1	df2	Sig.
9.222	5	103	.000

ANOVA

Gross domestic product / capita

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3.25E+09	5	650711082.0	52.314	.000
Within Groups	1.28E+09	103	12438622.64		
Total	4.53E+09	108			

Post Hoc Tests

Multiple Comparisons

Dependent Variable: Gross domestic product / capita
Scheffe

(I) Region or economic group	(J) Region or economic group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
OECD	East Europe	11451.07*	1216.88	.000	7322.10	15580.04
	Pacific/Asia	12347.86*	1150.65	.000	8443.60	16252.12
	Africa	15612.17*	1116.68	.000	11823.17	19401.17
	Middle East	11653.45*	1150.65	.000	7749.18	15557.71
	Latn America	14613.19*	1088.41	.000	10920.13	18306.25
East Europe	OECD	-11451.07*	1216.88	.000	-15580.04	-7322.10
	Pacific/Asia	896.79	1272.85	.992	-3422.12	5215.69
	Africa	4161.10	1242.23	.055	-53.90	8376.10
	Middle East	202.37	1272.85	1.000	-4116.53	4521.28
	Latn America	3162.12	1216.88	.249	-966.85	7291.09
Pacific/Asia	OECD	-12347.86*	1150.65	.000	-16252.12	-8443.60
	East Europe	-896.79	1272.85	.992	-5215.69	3422.12
	Africa	3264.32	1177.43	.185	-730.82	7259.45
	Middle East	-694.41	1209.70	.997	-4799.02	3410.20
	Latn America	2265.33	1150.65	.570	-1638.93	6169.59
Africa	OECD	-15612.17*	1116.68	.000	-19401.17	-11823.17
	East Europe	-4161.10	1242.23	.055	-8376.10	53.90
	Pacific/Asia	-3264.32	1177.43	.185	-7259.45	730.82
	Middle East	-3958.73	1177.43	.054	-7953.86	36.40
	Latn America	-998.98	1116.68	.976	-4787.98	2790.02
Middle East	OECD	-11653.45*	1150.65	.000	-15557.71	-7749.18
	East Europe	-202.37	1272.85	1.000	-4521.28	4116.53
	Pacific/Asia	694.41	1209.70	.997	-3410.20	4799.02
	Africa	3958.73	1177.43	.054	-36.40	7953.86
	Latn America	2959.75	1150.65	.260	-944.52	6864.01
Latn America	OECD	-14613.19*	1088.41	.000	-18306.25	-10920.13
	East Europe	-3162.12	1216.88	.249	-7291.09	966.85
	Pacific/Asia	-2265.33	1150.65	.570	-6169.59	1638.93
	Africa	998.98	1116.68	.976	-2790.02	4787.98
	Middle East	-2959.75	1150.65	.260	-6864.01	944.52

*. The mean difference is significant at the .05 level.

Homogeneous Subsets

Gross domestic product / capita

Scheffe[a,b]

Region or economic group	N	Subset for alpha = .05		
		1	2	3
Africa	19	998.68		
Latn America	21	1997.67	1997.67	
Pacific/Asia	17	4263.00	4263.00	
Middle East	17	4957.41	4957.41	
East Europe	14		5159.79	
OECD	21			16610.86
Sig.		.055	.219	1.000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 17.807.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

SECTION B

Choose at least one question from this section.

QUESTION 2

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

    (a)   Multiple Regression
    (b)   Multicollinearity
    (c)   Independent t-test
    (d)   Effect size
    (e) R^2_{change}
    (f)   Type I error
    (g)   Parameter
    (h)   One way ANOVA
    (i)   CROSSTABS
    (j)   *A priori*
    (k) r_{pb}
    (l)   b coefficient
    (m)   Adjusted R^2 **[Total: 25 marks]**

QUESTION 3

Given the research hypothesis "Fourth year students with teaching experience are able to express themselves more fluently in class presentations than those with no teaching experience"; propose an ex post facto study based on this hypothesis.   **[Total: 25 marks]**

SECTION C

Choose at least one question from this section.

1. (a) Enumerate and explain three major characteristics of qualitative research.
    3×6=18 marks

    (b) What studies tend to land themselves to qualitative research techniques and why?

    7 marks

    [*Total:25 marks*]

2. (a) Participant observation is one way of gathering data in qualitative research. Cite three advantages associated with this approach.
    3×4 = 12

    (b) What were some of the criticisms levelled against this approach? Name and discuss any three.   3×3=9

    (c) How have researchers dealt with one of the issues you raised?
    1×4=4
    [*Total: 25 marks*]

3. Write brief explanatory notes on any three of the following:
    a. Ethnographic studies
    b. The unstructured interview
    c. The focus group discussion
    d. Triangulation