EFFECT OF GROUP COUNSELLING ON THE ATITUDE OF SENIOR SECONDARY SCHOOL STUDENTS TOWARDS MATHEMATICS IN MAIDUGURI METROPOLITAN AND KONDUGA LOCAL GOVERNMENTS OF BORNO STATE, NIGERIA

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Abstract
This is a quasi-experimental study using the pre-post-treatment design to investigate the effect of group counseling on the attitude of Senior Secondary II Students towards Mathematics, in Borno State. The study was guided by two objectives, and two hypotheses. A total of 60 students (30 males and 30 females) were selected by simple random sampling from two Senior Secondary Schools in Borno State. The control and experimental groups were randomly assigned 15 males and 15 females each. The experimental group was group counseled for 6 weeks in relation to confidence in one's ability to learn and perform well in Mathematics; perception of Mathematics as a selected subject; the usefulness of Mathematics and interest in Mathematics. Both the experimental and control groups responded to a 20- item attitudinal scale before and after the treatment. Mean Standard Deviation and a T-test of independent means was used to analyze the data. The results of the analysis indicate that the experimental group showed a significantly improved attitude towards Mathematics, than the control group at P<0.05.

Keywords: Group counseling, attitude, students, mathematics, perception, effect of counseling, secondary school mathematics

Introduction

Mathematics has been recognized as being central, basic and indispensable in the national effort, through education, to transform Nigeria into a scientific, technological and industrial society (NPE, 1984). In this regard, mass failure *of* students in Mathematics has equally been identified as a real threat to Nigeria's educational objectives, capable of undermining the promises of the educational policy. Some researchers in education noted that_attitude of students play a significant role in achievement or performance in learning activities and tasks (Sorenson, 1994; Biu, 1987; Bwala, 1991). More especially Dauda (1991) observed that studies on attitude established a conflict between students and Mathematics in the learning process.

The problem of this study is to find how effective the strategy of group counseling could be used to change the attitude of students towards Mathematics in the two local government of Borno State.

The objectives of this study were to:

i. determine if there was a significant difference between the attitude of mathematics students reported before and after group counseling; and

(ii) find out if there was a significant difference in the effect of group counseling on male and female mathematics students.

The following hypotheses were formulated and tested at P<0.05

(i) $H0_1$: There is no significant difference

in attitude towards mathematics between the control and the experimental group, using group counseling.

(ii) $H0_2$: There is no significant difference in attitude towards mathematics between male and female students in the experimental group, as a result of group counseling.

Methodology

This is quasi experimental study using the pre-post-test control group design. It was conducted in two local governments of Borno State to determine the efficacy of group counseling on the attitude of Senior Secondary II students towards mathematics. The mean, standard deviation and t-test of independent means were used to analyze the data collected from the study.

The target population of this study was Senior Secondary II students in Government Girls Senior Science Secondary School, Konduga and Government Day Secondary School Maiduguri in Barno State (these two schools are designated as science based—konduga and arts based—GDSS Maiduguri). A total of 60 students (30 for each school) were randomly selected. The exercise lasted two weeks, the experiment was conducted in two phases, and each phase lasted a week.

The 60 subjects for the two schools were randomly divided into two groups of 15 from each, school which were used as experimental and control groups for males and females. The first group of 15 students was from each school was considered as experimental and treatment was administered while the second group of 15 students from each school was the control group and no treatment was administered. This provided an experimental group, and a control group of 30 subjects from each school. The attitudinal scale used for this study was a 20-item Likert-type scale for its high internal consistency, reliability and construct validity values.

The study was carried out in 3 stages, pre-treatment, treatment, and post-treatment. The mean score for the control group is 33.6 while pre-treatment measure for the experimental group is 35.6 both of which indicate negative attitude towards Mathematics. The pre-treatment mean scores were found to be comparable using t-test at the $p<0.05$.

Presentation of Results

The result of the study is presented in tables as below:

Table1: t-test comparison between Experimental and Control Groups after Treatment**.**

S/No	Groups	Mean	SD	N	Df	t	p
1.	Experimental	63.3	3.45	30	29		
2.	Control	36.2	2.86	30	29	15.79	s

$P<0.05$; $t=15.79$ S=significant

Table 1: table I above compares the effectiveness of group counseling among experimental and control groups after treatment and the result shows significant difference between the two groups

Table 2: t-test comparison between male and female students after treatment

S/No	Groups	Mean	SD	N	Df	t	p
1.	Male	65.6	5.30	15	29		

2.	Female	64.3	4.60	15	29	2.30	NS

P<0.05; t=2.97 NS=Not significant

$H_{1;}$ the nulnl hypothesis predicts that there will be no significat difference in attitude towards mathematics between the male and female groups, as a consequence of group counseling treatment.

Results and Discussion

Table 2 compares the effectiveness of group counseling on the attitude of male and female experimental subjects after treatment. The result of gives t = 2.30 which is not significant at the p 0.05 level. This indicates that group counseling had the same effect on male and female students. HO_I" The null hypothesis predicts that there will be no significant difference in attitude towards mathematics between the control and experimental groups, as a consequence of group counseling treatment.

From table I the comparative analysis of attitude responses between the control and experimental groups after treatment shows mean scores of 36.2 and 63.3 respectively. The result of the t-test gives t =15.79 which is significant at the P<0.05 level. Consequently, the null hypothesis HO_I is rejected.

HO_2: The null hypothesis predicts that there will be no significant difference in attitude towards mathematics between the male and female students in experimental groups, as a result of group counseling treatment. The comparative analysis of attitude response of male and female students who received treatment shows group means of 65.6 and 64.3 respectively. The t-test" gives t = 2.30 which is not significant at the P< 0.05 level. The null hypothesis is therefore accepted. The comparable attitude scores of the control and experimental group before treatment indicates that the phobia for Mathematics is common to a large number of students in senior secondary II. One would have expected the subjects from the Government Senior Science Secondary School Konduga to report a better attitude towards mathematics as a result of their science background. The negative attitude they reported is probably because only few may have chosen science on their own, given the emphasis of students' admission by Local Government Area quota, in the school.

The pre-treatment comparability of the control and experimental groups favours the probability that the treatment was mainly accountable "for subsequent improvement in attitude in the experimental group.

The requirement for adequate outcome criteria for an experimental study such as this was met through the pre-treatment attitude scores of the control and experimental groups. Akinboye (1986) asserts that it is necessary to establish a baseline by which standard the subsequent effectiveness of therapy may be evaluated. The homogeneity of the control and experimental groups before treatment suggests that the treatment was mainly accountable for subsequent change in attitude among the experimental group. The significant difference in attitude found between the control and experimental groups after treatment is not surprising. Most studies of group counseling efficiency report successful results. Ogunlade (1986) Kolo (1989) and Mai,(1990) have all reported improvement among group counseling subjects in variables such as achievement

study habits and attitudes. As Gazda, (1971) observes, the counselees utilize the group interaction to accept positive values and goals, through increased understanding, which facilitates the learning and unlearning of certain attitudes and behaviours.

The absence of significant difference between male and female students who took part in the study in the experimental group could be related to recent developments in societies across the world. More and more women have ventured into areas that used to be the exclusive preserve of men; such as, engineering, piloting, medicine, football, wrestling, boxing, politics and big business. The superiority of social status which men have enjoyed over women through the ages is slowly but decidedly diminishing with the current social trends.

Conclusion

This experimental study on group counseling accords with the views of many theorists and counselors; as well as corroborates several research findings that group counseling can be used to help students overcome their academic problems.

Recommendations

From the findings of this study, the authors wish to recommend the following with the belief that properly implemented the unfounded belief among students that mathematics is a difficult subject and should best be left to the male folk would be discarded by the generality of students and the female gender I particular:

- Before students are divided into science/arts classes group counseling be carried out by experienced and seasoned counselors and the group counseling sessions be compulsory and mandatory for all category of students in the school

-Counselors in all senior secondary schools in the State who have biases in mathematics education be the ones to counsel the students as they possess the requisite methodology in imparting mathematics knowledge to the students.

-Periodic quiz in mathematics be organized and conducted by seasoned mathematics teachers and counselors and prizes given at the end of each session of the quiz. The content of the quiz questions be such that is within the reach of majority of the participants and,

-both male and female students given equal chance during the quiz sessions

References

Akinboye, J.O. (1986): Research Methodological Basis for applied psychology in Nigeria. *Nigerian Journal of Applied Psychology* 1(2); 4

Biu, H.A. (1987): Factors affecting students'performance in science subjects in the School Certificate Examination. Unpublished Master's Thesis, University of Maiduguri

Bwala, B.P: (1991) Attitude of Student towards geography in relation to their academic performance in the Senior Secondary Schools in Borno State; Unpublished Master's Thesis, University of Maiduguri.

Dauda, B. (1991): Women and Mathematics: Is there a problem? Educating the Nigerian women for the 1990s; National Symposium conducted at the University of Maiduguri. Federal Ministry of Education (1984): National Policy on Education, Lagos.

Gazda, G. M. (1971): *Group Counseling Developmental approaches Boston*: Allyn T. Bacon.

Kolo, F.O. (1989): Fostering realistic school subjects choice of Secondary School students in Nigerian; *Journal of Research in Counseling Psychology* 1(1); 103-107.

Mai, A.I. (1990): The effectiveness of group Counseling on students' performance in English Language in Borno State (Unpublished Master's Thesis, University of Maiduguri)

Ogunlade, O.E. (1986): The effect of group counseling on the attitude and performance of low achievers in arithmetic. *The Nigerian Journal of Guidance and Counseling* 1(2); 103-113.

Sorenson, H. (1994): *Psychology in education*; New York; McGraw - Hill.

Appendix A: The Attitude Scale

S/N	**Item**	SA	A	UD	DA	SD
1	I can do mathematics					
2	Work that involve mathematics belong to men					
3	I understand mathematics problems					
4	Girls are good at mathematics					
5	I do mathematics because I must					
6	I will need mathematics for my future work					
7	I like solving mathematics problems					
8	Studying mathematics is a waste of time					
9	Mathematics is boring					
10	Boys are better at mathematics than girls					
11	Mathematics is a difficult subject					
12	I like mathematics because I know how useful it is					
13	Mathematics should be studied only by boys					
14	I am good at mathematics					
15	I would like to do more mathematics in the future					
16	I like reading mathematics textbooks					
17	Knowing mathematics would help me earn a living					
18	Mathematics textbooks are difficult to understand					
19	I will use mathematics in many ways as an adult					
20	Girls can do mathematics as well as boys					

Key: SA=Strongly Agree
A= Agree Disagree
UD=Undecided Strongly Disagree