

## THE INFLUENCE OF GROUP DISCUSSIONS ON PERFORMANCE OF PUPILS IN MATHEMATICS IN MADI OKOLLO DISTRICT: A CROSS SECTIONAL STUDY.

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### Abstract

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### Background

This study aims to assess the influence of group discussions on the performance of pupils in Mathematics in Madi Okollo District.

### Methodology

The instruments that were used in the study included self-constructed questionnaires and interview guides. The data obtained from the study was analyzed qualitatively. Frequency tables and percentages were used to present and analyze the data. Data obtained from the interview were equally analyzed. The study adopted a descriptive correlational design. The design was chosen because, through it, the researcher will be able to collect and analyze data as it exists in the field without manipulating any Variables.

### Results

The study established that there is a significant positive relationship between group discussions and the academic performance of pupils in mathematics. Therefore, by encouraging learner-centered methods, Learners are encouraged to bring their ideas and experiences into the classroom during learning would cause improvement in academic performance in mathematics. The hypothesis that there is a positive relationship between group discussions and the academic performance of pupils in mathematics was accepted.

### Conclusion

From the study, it was found that group discussions are necessary if pupils' performance in mathematics is to improve. If teachers encourage learners to participate in class and also discussions while outside class their performance would greatly improve.

### Recommendations

The pupils should form discussion groups to get or share knowledge among them to perform well in exercises and overall grade pass. Ministry of Education and Sports should provide schools with the necessary materials e.g. teachers' reference books, pupils' textbooks, and other print materials.

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**Keywords:** Discussions, Performance, Group, Pupils, Mathematics, Influence, Madi Okollo District.

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### Introduction

Mathematics is a discipline of symbols. It's one of the practical science subjects on the ground in most learning institutions. It started a long time back in the period when man started counting things by matching the actual quantity with concrete objects like stones, seeds, and beads by then.

Since then, it has been argued by most educators that for learners to understand the mathematics concept; teachers should involve and use teaching aids because the availability of learning resources enhances the effectiveness of schools as these are basic things that can bring about good performance in learners. The performance of pupils in upper primary classes in mathematics in the Pawor sub-county is declining yearly. Such decline has worsened the already existing problems of inadequate classrooms, the laziness of

teachers, inadequate content coverage, poor sanitary and hygienic facilities, and above all poor follow-up of contemporary issues in schools. On the other hand, Pupils' indiscipline and bad social behaviors are other causes for pupils' poor performance. Pupils who are constantly absent from school are more likely to perform poorly since they cannot keep up with their schoolwork. From the available evidence it is certain that the government has recruited and trained adequate teachers for the discipline, financed education, and provided textbooks plus other scholastic materials to be used in schools in an attempt to combat inadequate learning aids in schools yet the results of pupils in mathematics in primary schools in Madi Okollo District, Pawor sub-county continues to be bad every year. This study aims to assess the influence of group discussions on the performance of pupils in Mathematics in Madi Okollo District.

## Methodology

### Research Design

According to Ngechu (2001), a research design is a plan showing how Problems that hinder investigation are solved. The study adopted a descriptive correlational design. The design was chosen because, through it, the researcher will be able to collect and analyze data as it exists in the field without manipulating any Variables.

The researcher used a survey design. Qualitative methods were used to assess the impact of learning aids on the performance of pupils in mathematics in upper primary classes in Madi Okollo District, Pawor sub-county while quantitative methods were applied through the use of tables, charts, and graphs among others.

### Population of the study

The study was conducted in five public primary schools that is Akavu Primary School, Pawor Primary School, Ayavu Primary School, Alijoda Primary, and Odraka Primary School in Madi Okollo District, It involved Teachers,

Director of studies, School Management committee members, the District Education Officer and Head Teachers. The study targeted 62 Teachers, 5 Directors of Studies, 5 Head Teachers, 1 District Education Officer, and 65 School Management committee members making a total of **538** respondents. These five schools were selected because they are located within the researcher's area of work.

### Sampling Size

Five government grant-aided primary schools in the Pawor sub-county, Madi Okollo District were sampled using a simple random sampling technique to give a representation of all categories of schools in the Sub-county.

Sample frames consisting of the head teacher, teachers, Pupils, and school management committee were administered.

Given a population of **538** respondents, the sampled size of **217** respondents was determined using **Krejcie and Morgan's (1970) table**

**Table 1: Showing the selection of Respondents.**

Respondents	Number	Sample
DEO	1	1
Head teachers)	5	2
Teachers	62	25
Pupils	400	161
Director of Studies	5	2
SMC	65	26
<b>Total</b>	<b>538</b>	<b>217</b>

### Sampling Techniques

Oarsman (1995) describes a sample as a small population of the target population selected systematically to suit the study. In this study, simple random and purposive sampling techniques were utilized. Headteachers, the District Education Officer, and the Director of Studies will be purposively selected. Teachers, Pupils, and School Management Committee members will be selected using simple random sampling. This will help to create no bias among the respondents that will be selected

### Data collection methods

While in the field, the researcher used the following methods of data collection.

### Interviews

The Researcher applied interviews by asking questions that were relevant to the topic orally and the interviewee answered them freely.

## Observation

Here the Researcher used the naked eye to see the phenomena under investigation.

## Questionnaire

The researcher used written down questions developed in advance and sent to the respondents to answer. This method was used to gather data from students and teachers.

## Data collection instruments

The researcher used the instruments explained below.

## Interview guide

The interview guide was administered to the Headteacher, Pupils, and SMC. This gave an account of the effects of teaching-learning aids on pupils' performance in mathematics.

The interview guide was directed towards what to be done to improve learners' performance in mathematics.

The interview guide was designed to extract information on the factors that have influenced the performance of pupils in mathematics.

## Questionnaire

This contained questions whose answers were to be provided by the respondents that is the Head teachers, Heads of mathematics departments, mathematics teachers, and class teachers. The questionnaires were given earlier to the respondents to fill in the answer and the researcher moved around to collect the filled questionnaires after a week. The questionnaires were open-ended and close-ended.

## Documentation review

The researcher obtained the information from the head teacher, head of the mathematics department, mathematics teacher, and class teacher by consulting their documents related to the objectives of the study. Records of learner progress were also being examined.

## Focus group discussion

The researcher assembled a group of respondents to discuss factors affecting the performance of pupils in Mathematics. This was administered to SMC and teachers.

## Observation Checklist

To beat the time pressure, language barrier, and bias, and observation checklist was administered to gather information in the field.

## The procedure of data collection

After approval of the research proposal, the researcher got an introductory letter from Team University which was presented to the District Education Officer Madi Okollo where the DEO thereafter wrote another letter introducing the researcher to the respective head teachers of the sampled schools who also introduced the researcher to his/her staff and pupils and made an appointment on when to carry out or conduct the proposed activities with them.

## Data analysis

Analysis of data was done for both qualitative and quantitative data.

Filled questionnaires were collected, sorted, coded, and entered into a computer using a statistical package for social scientists (SPSS). SPSS generated descriptive statistics such as means, standard deviations, frequencies, and percentages. The Pearson correlation coefficient was used to test the relationship between teaching aids and pupils' academic performance in mathematics. Regression analysis was used to determine the strength and the direction of the relationship between teaching aids and pupils' academic performance in mathematics.

Data from all interviews will be collected, analyzed, and presented qualitatively. The information was presented narratively using quotes and themes (Teddlie & Tashakkori, 2009). The qualitative findings were used to supplement the data from the questionnaires.

## Data reliability and validity

### Validity of the instruments

According to Gay (1981), validity is the degree to which a test measures what is supposed to measure. Through piloting, the instrument was pre-tested to allow the researcher to improve their validity as well as familiarize them with the data collection process. Content validity was used to check the representation of the research questions in the questionnaires.

### Reliability of the Instruments

According to Mugenda (1999), reliability is a measure of the degree to which a research instrument is consistent in giving the same results after repeated trials. The questionnaires were administered for pilot purposes to the same respondents twice within two weeks and analysis was done.

### Ethical consideration

The researcher took concern over all possible unethical conduct that tended to jeopardize the research process and outcome. The issue of bias was avoided where the opinions of respondents were respected hence objectivity. Privacy and confidentiality were observed whereby hence all information provided and anonymity of respondents was respected where their identity are not disclosed.

**Table 2, showing the response rate of the study.**

Respondents	Questionnaires issued	Questionnaires received	Response rate
DEO	1	1	100%
Head teachers	2	2	100%
Teachers	25	20	80%
Pupils	161	140	87%
Director of Studies	2	2	100%
SMC	26	21	81%
<b>Total</b>	<b>217</b>	<b>186</b>	<b>86%</b>

## Results

### Response rate

According to findings in Table 2, of the 161 primary pupils selected for the study, 140 returned the questionnaires representing an 87% response rate. Of the 25 teachers selected for the study, only 20 returned the questionnaires giving a response rate of 80%. Of the the 26 school management committee members selected for the study, 21 members returned the questionnaires giving a response rate of 81. Therefore, the overall response rate of the study was 86% and the non-response rate was too small to alter the findings of the study. According to Mugenda and Mugenda (1990), a response rate above 70% is considered as good.

### The relationship between group discussion and academic performance of primary pupils in Madi Okollo District

The researcher used a Likert scale where the answers were on a scale of 1 to 5 and 5= Strongly Agree, 4= Agree, 3 = Neutral, 2 = Disagree and 1 = Strongly Disagree. The table also includes the summary of the participant’s responses based on percentages (P), frequency (F), standard deviation (Std), and mean of detailed understanding of the responses. According to Table 3, on the statement “teacher’s contributions are valued in class discussion”, the average response was 1.95 with a standard deviation of 1.18. Further, the findings showed that 75.9% of the respondents agree that “teacher’s contributions are valued in class discussion.

On the statement “Teaching methods are learner-centered and a variety is being used”, the average response was 4.45 with a standard deviation of 0.37. Further, the findings showed that 94.1% of the respondents disagree that Teaching methods are learner-centred and a variety is being used.

On the statement “Learners participate in guided decision making”, the average response was 1.45 with a standard deviation of 0.39. Further, the findings showed that 87.7%

of the respondents agree that Learners participate in guided decision-making

On the statement “Learners are encouraged to bring their ideas and experiences in the classroom during learning”, the

average response was 1.6 with a standard deviation of 0.39. Further, the findings showed that 92.4% of the respondents agree that Learners are encouraged to bring their ideas and experiences in the classroom during learning.

**Table 3 showing descriptive findings on the relationship between group discussion and academic performance of primary pupils in Madi Okollo District.**

Statement		A	SA	N	D	SD	mean	Std
Teachers contributions are valued in class discussions	Freq	75	54	21	15	5	1.95	1.18
	Perc	44.1	31.8	12.4	8.8	2.9		
Teaching methods are learner centred and a variety is being used	Freq			10	73	87	4.45	0.37
	Per			5.9	42.9	51.2		
Learners participate in guided decision making	Freq	113	36	21			1.45	0.39
	Per	66.5	21.2	12.3				
Learners are encouraged to bring their ideas and experienced in the class room during learning	Freq	85	72	13			1.6	0.39
	Per	50	42.4	7.6				

Source: Primary (2023)

**Table 4: showing the correlation between group discussions and academic performance of primary pupils in mathematics in Madi Okollo District.**

		Group discussions	Academic performance
Group discussion	Pearson Correlation	1	.741**
	Sig. (2-tailed)		.000
	N	170	170
Academic performance	Pearson Correlation	.741**	1
	Sig. (2-tailed)	0.000	
	N	170	170

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Source: Primary (2023)

### **Correlational findings on the relationship between group discussions and academic performance of primary pupils in Madi Okollo District**

According to the findings in Table 4, the correlation between group discussions and the academic performance of pupils in primary schools was 0.741 with a sig value of 0.000. This indicated a significant positive relationship between group discussions and the academic performance of pupils in mathematics in Madi Okollo District. Therefore, group discussions among primary pupils influence their academic performance Madi Okollo District.

### **Discussion**

The study established that there is a significant positive relationship between group discussions and the academic performance of pupils in mathematics. Therefore, by encouraging learner-centered methods, Learners are encouraged to bring their ideas and experiences into the classroom during learning would cause improvement in academic performance in mathematics. The hypothesis that there is a positive relationship between group discussions and the academic performance of pupils in mathematics was accepted.

In conjunction with the findings, Grant (1964) says the role of the teacher is to guide learners on how to bring the required materials necessary for learning, then learners use available local materials within their environment to stimulate their learning.

Austin (1979) support explains that group discussion is the process of increasing the knowledge and skills of an individual to perform well in the subject frequently discussed, as Group discussion creates a change in the thinking and behavior of pupils to enable them to do well in class and develop their capacity and prepare them for greater responsibilities and good grades in exams.

The finding is further explained by Koech (2006), who talks about "discovery" skills that should be built in the learners. If the materials are availed in a learning situation, the learners would then find it flexible to discover the facts behind the expectations of the teachers on their own.

He continued to say, that it is not teachers' work to spoon-feed learners with the facts, but it is learners' responsibility to dig for the solutions on their own.

### **Conclusion**

From the study, it was found that group discussions are necessary if pupils' performance in mathematics is to improve. If teachers encourage learners to participate in class and also discussions while outside class their performance would greatly improve.

### **Recommendation**

The pupils should form discussion groups to get or share knowledge among themselves to perform well in exercises and overall grade pass. Ministry of Education and Sports should provide schools with the necessary materials e.g. teachers' reference books, pupils' textbooks, and other print materials.

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### **Conflict of interest**

The author had no conflict of interest.

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