



ROLE OF ATTITUDE, INTEREST AND PEER PRESSURE IN ACADEMIC OUTCOMES OF GIRLS IN GEM SUB - COUNTY, KENYA

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ABSTRACT

Girls in secondary schools have been recording a low academic outcomes in mathematics and it is due to this that the study investigated the relationship between academic outcomes of girls in mathematics and other subjects in secondary schools in Gem Sub-County. Specifically the study, determined the relationship between attitude, interests, and academic outcomes of girls, established role of peer pressure in academic outcomes of girls in mathematics in comparison with other subjects. The study was guided by social theory developed by Bandura in 1967. The study adopted correlation survey and used stratified sampling to 6 select schools and respondents from a population of 1770 secondary girls and purposive sampling to select 66 subject teachers and 6 head teachers. The correlation coefficient ($r = .530, p = .003$) computed showed high positive correlation between academic outcomes and attitudes and interest among female students in secondary schools. The correlation coefficient ($r = 0.640, p = .042$) computed revealed a weak but statistically significant relationship between peer pressure and differences in academic outcomes in mathematics and other subjects among female students in secondary schools from Gem Sub-County. The study concluded that lack of interests, attitudes and peer pressure contributed to difference in academic outcomes between mathematics and other subjects therefore the study recommended that Mathematics subject teachers and the school administration should find a way of creating awareness on important of mathematics.

Keywords: Academic outcomes, Attitude, Gender, Interest, Peer influence, Gem sub – county.

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Contribution/ Originality

The study contributes in the existing literature on pertinent issues involving girl child education. The paper's primary contribution is that academic outcomes are highly correlated with attitudes and interest and that there is a weak but statistically significant relationship between peer pressure and difference in academic outcomes of girl child.

1. INTRODUCTION

1.1. Attitudes, Interests of Girl Students and Academic Outcomes

Mubeen *et al.* (2013) from their study conducted in Pakistan, assert that attitudes towards a subject are the important determinants of academic success and achievement. It was found that boys differed in their mathematical achievement from girls. It was also found that Girls achieved better results in comparison to boys. The study failed to look into relationship in performance between mathematics and other subjects among girls, which the current study seeks to carry out. Nicolaidou and Philippou (2003) carried out a study to explore relationships between

students' attitudes towards Mathematics, self-efficacy beliefs in problem-solving and achievement. The possibility of attitudes and self-efficacy to predict problem-solving performance was also examined. The result indicated significant relationship between attitudes and achievement and a stronger relationship between self - efficacy and achievement. Attitudes and efficacy were also correlated and both predicted achievement in problem-solving. However, efficacy was a more powerful predictor than attitudes. No gender difference was found in any of the examined variables. The above study focused on gender difference in performance while the current study focused on girl's attitude and interest in mathematics and how the performance in mathematics relate to other subjects.

Mensah *et al.* (2013) study in Ghana postulate that indispensable role of attitude in the Mathematics outcomes has garnered the attention of educational researchers and Mathematics educators around the world. The study unveiled a significant relationship between teacher attitude and student attitude toward Mathematics. It was realized that teachers' positive attitude radiated confidence in students hence made them develop positive attitude towards the learning of Mathematics. The results of the study were also consistent with existing findings on the relationship between teacher attitude and students' performance in Mathematics.

Adebule *et al.* (2014) investigated the comparison of male and female students' attitude towards mathematics. The study showed that the attitude of students towards mathematics did not depend upon sex. Therefore, it is recommended that sex should not be considered as a factor influencing the attitude of students towards mathematics and those teachers should teach mathematics freely among the students of different sexes .

Owiti (2011) in Kisii assert that mathematics plays an important role in scientific advancement and development in general. In Kenyan education system, it is a compulsory subject at secondary school level. However students' attitudes toward the subject have been largely blamed for the continued poor performance over the years. The findings of the study indicated that more boys than girls (93.7% of boys compared to 59.5% of girls) had positive attitudes toward mathematics while more girls than boys (35.7% of girls compared to 6.3% of boys) were negatively oriented toward mathematics. Based on the findings, it was concluded that significant gender differences in attitudes toward mathematics existed among students of secondary schools in Kisii municipality and that closure of the sex differential gap could help see girls perform better in mathematics as well.

In a study by Holden (1997) he reveals that peer influences are important, particularly as the student gets older and peer relations start to gain importance over parental relations. As their peers accumulate gender-stereotyped information, and behaviors, they are in turn shaped by their peers' beliefs and behaviors. Messages such as "girls are better at reading," "nurses are women," and "engineers are normally men," that can come from parents, media, school, and society, can be relayed through student peers to further reinforce notions of what boys are good at and what girls are good at. Gender-stereotypes picked up from peers and school may also teach children self-inhibiting behaviors for achievement. It has been suggested that boys who subscribe to the "macho" stereotype of males may be more prone to delinquency and avoid "feminine" subjects such as reading and dance.

Mata *et al.* (2012) in Portugal carried out a study to understand how certain different but interrelated variables such as background, motivation, and social support could lead to an explanation of student attitudes towards math and to an understanding of the defining characteristics of these attitudes in the school environment. In general, it was concluded that students held positive attitudes towards mathematics and that motivation-related variables are the main predictors of attitudes towards mathematics and that teachers and the social support of peers are also highly significant in understanding these attitudes. Korir and Kipkemboi (2014) examined the relationship between school environment, peer influences and students' academic performance. The study established that school environment and peer influence made significant contribution to the students' academic performance. Therefore, the study suggested that the head teacher and the teachers should enhance a conducive learning environment in which the learners are free to consult them when in need, provide adequate learning facilities and arouse interest in the learners to work hard. Peer level factors were also revealed to have a relationship with students' academic performance.

1.2. Purpose of the Study

The purpose of this study was to establish relationship between academic outcomes of girls in mathematics and other subjects in Gem sub-county and also to focus on factors that could lead to this difference in performance. The Research Objectives guiding the study were:

- i. To determine the relationship between attitudes and interests of girl students and academic outcomes.
- ii. To establish role of peer influence and how it contributes to difference in performance of girls in mathematics and other subjects.

2. RESEARCH METHODOLOGY

2.1. Research Design

This study used the correlation study design (Cresswell, 2008). Creswell explains correlation research design as a design in which the researcher is interested in the extent to which two variables or more vary, where changes in one variable are reflected in changes in the other. This design is therefore valid for the current study which tries to establish relationship between performance in mathematics and other subjects on girls in Gem sub-county, Kenya.

2.2. Instrumentation

Borg and Gall (1983) defines research instruments as “tools for collecting data”. In this study, self administered questionnaires for the teachers and students in public secondary schools in Gem Sub-County were used as instruments of collecting data.

2.3. Validity and Reliability

The researcher conducted validity and reliability of the instruments. To test the reliability of the instruments, the researcher employed the test-retest during the pilot study. The researcher administered the questionnaire on to one principal, three teachers and 8 students. After one week the researcher administered the same instruments to the same respondents. A test retest was done to test the reliability of the study techniques and to perfect the questionnaire concepts and wording. It also helped to find out if the wording were clear and if all the questions were interpreted in the same way by the respondents. The reliability of the instruments was estimated after the pilot study using the Cronbach's reliability coefficient, which is a measure of internal consistency. A reliability of 0.67 was gotten and considered appropriate, Kothari (2004).

2.4. The Study Population

The study population consisted of all girls from form one to form four secondary students from 18 Public Secondary Schools with girl child population in Gem Sub County of Kisumu County. The schools have a total enrolment of about 1770 girl students. The study also targets the subject teachers since they also contribute to the performance of the students and there are 216 teachers in the 18 schools in the region.

2.5. Sampling Techniques

The sampling unit for this study were schools selected within Gem Sub – county. Stratified random sampling method was used to select the percentage of schools that were included in the study. Two strata were applied for the study and this includes type of the school and second is the size of the school as per the number of students in each class. A total of 6 schools (33%) out of 18 was sampled as follows: 3 girls boarding and 3 mixed day schools. six (6) schools was used in the study where an equal number of thirty (30) girls from each school and at least 8 from every form was selected. 66 subject teachers from all schools were purposively selected that is one teacher from every subject assuming every selected school offers 11 subjects and all 6 principals of sampled schools were included

in the study. Total sample size was 252 respondents, that is 180 students (10%), 66 subjects teachers (15%) and 6 principals (33%).

2.6. Data Analysis

The questionnaires were coded and data entered into the computer for analysis. The Statistical Package for Social Sciences (SPSS) version 17.0 was used to process and analyze quantitative data. Descriptive statistics involved calculating frequencies, means, and percentages and Pearson Product Moment was used to determine the relationship of variable in the study.

3. RESULTS & DISCUSSION

3.1 Female Students' Attitudes and Interests and Academic Achievement

To address the first research objective, questionnaires were carefully developed investigating the elements of attitudes and interests among the female secondary school students. The items in the questionnaire were related to facts/perceptions which were linked to actions influenced by attitudes or interests that had bearing on academic achievement. The students' respondents were presented with statements that had attitude connotations and were Likert-scaled.

Table-1. Attitudes and interests of girl students and academic outcomes

ITEMS	S.A	A	U	D	S.D
Mathematics is my favorite subject	29	40.3	9.1	17.0	4.5
Mathematics is interesting when learning	50	38.6	5.1	3.4	2.8
I hate mathematics	2.8	11.4	11.9	16.5	57.4
Girls practice solving mathematics problems	34.1	45.5	12.5	6.3	1.7
I score highly in mathematics compared to other subjects	9.1	23.3	15.9	26.1	25.6
I perform better in language and humanity subjects	54.5	26.7	10.2	6.8	1.7
I find other subjects easier to revise than mathematics	32.4	20.5	8.0	20.5	18.8

Source: Summary of survey data, Gem Sub - County

From the findings in table 1, although 39.3% of the students' respondents held the opinion it is easier to revise mathematics than other subjects, a significant proportion (52.9%) of the students' found other subjects easier to revise than mathematics. It was sad to note that only 32.4% of the student respondents scored high in mathematics as compared to other subjects while more than a half of the students' respondents scored high in other subjects than in mathematics.

It emerged that mathematics was a favorite subject for a reasonable number of the students at 69.3%, however 21.5% reported that mathematics was not their favorite subjects. Majority of the students liked mathematics since only 13.2% accepted that they hate mathematics. 80.6% of the students found learning mathematics interesting and finally majority of the girl students practice solving mathematics problems as reported by nearly 80% of the students. These findings concur to Nicolaidou and Philippou (2003) who correlated attitudes and efficacy and found that both predicted achievement in problem-solving.

3.2. Findings on the relationship between attitude and academic achievement

The relationship between attitude and academic achievement was tested. The set scores on the attitude were used as the independent variable while scores from academic achievement was used as the explanatory variable (dependant variable) table 2 below.

The correlation coefficient ($r = .530$, $p = .003$) computed indicated that there was high positive correlation between academic achievement and attitudes among female. The analysis revealed highly significant ($p < 0.05$)

positive relationship between academic achievement and attitudes (SPSS output is shown in Table1). Hence the study concludes that there were significant positive association between academic achievement and students attitudes and interests towards mathematics.

Table-2. Correlations

		Attitude	Academic achievement
Attitude	Pearson Correlation	1	.530**
	Sig. (2-tailed)		.003
	N	169	169
Academic achievement	Pearson Correlation	.530**	1
	Sig. (2-tailed)	.003	
	N	169	169

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

The coefficient of determination $R^2 = 32.49\%$, implied that negative attitudes towards mathematics alone help to account for ≈ 32 per cent of the variance in respondents' scores on the academic achievement scale among secondary school girls in Gem sub - county. The findings were similar with Mensah *et al.* (2013) who found a significant relationship between teacher attitude and student attitude toward Mathematics. It was realized that teachers' positive attitude radiated confidence in students hence made them develop positive attitude towards the learning of Mathematics. The findings also concurred with Nicolaidou and Philippou (2003) who found a significant relationship between attitudes and achievement and a stronger relationship between efficacy and achievement. Moreover the findings were also similar to Perera *et al.* (2012) who found that parents' attitudes towards science have a positive and statistically significant effect on science achievement.

3.3. Peer Influence and Performance of Girls in Mathematics and Other Subjects

This section looks peer influence and how it contributes to differences in performance of girls in mathematics and other subjects. Table 3, gives the summary of percentage responses on each of items in the questionnaire.

Table-3. Peer influence and performance of girls in mathematics and other subjects

ITEMS	S.A	A	U	D	S.D
We discuss mathematics problems in study groups	43.2	33	10.8	5.7	7.4
My peers and I find mathematics assignment to be easy and useful	38.6	31.3	17.0	10.8	2.3
My peers and I ask questions in mathematics lessons	27.3	46.6	17.0	6.3	2.8
Friends discourage me from pursuing mathematics	3.4	6.8	11.4	22.7	55.7
I avoid mathematics because my friends do not like it	1.7	1.7	10.8	18.8	67.0
My peers say mathematics is difficult	9.7	25.0	16.5	15.3	33.5

Source: Summary of Survey Data, Gem Sub - County

From the findings in the table3 majority of the students 76.5% discuss mathematics problems in study groups while 69.9% found mathematics assignments easy and useful with their peers. Although 34.7% of the students accepted that their peers said mathematics was difficult, majority 48.8% reported that their peers said mathematics was not difficult. Majority 73.9% of the respondents accepted that together with their peers they ask questions in mathematics lessons. Even though majority 78.4% of the respondents were not discouraged by their Friends from pursuing mathematics a smaller proportion 10.2% were discouraged by their friends from pursuing mathematics.

To address the second objective of the study, the relationship between relationship between peer influence and differences in performance in mathematics and other subjects was tested. To do this a correlation analysis was conducted. The set scores on the peer influence were used as the independent variable while scores from performance in mathematics and other subjects was used as the explanatory variable (dependant variable) table 4.

Table-4. Correlations

		Peer influence	Mathematics performance
Peer influence	Pearson Correlation	1	.640**
	Sig. (2-tailed)		.042
	N	176	176
Mathematics performance	Pearson Correlation	.640**	1
	Sig. (2-tailed)	.042	
	N	176	176

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

The correlation coefficient ($r = 0.640$, $p = .042$) computed revealed a weak but statistically significant relationship between peer influence and differences in performance in mathematics and other subjects among female students in secondary schools from Gem Sub-County (SSPS output is shown in Table4). The findings concurred with [Korir and Kipkemboi \(2014\)](#) who established that school environment and peer influence made significant contribution to the students' academic performance. A school, as a learning institution and as a second home for learners, has a strong relationship with students' academic performance. The head teacher and the teachers through their specific roles either have negative or positive influence on students' academic performance. Moreover the findings were in agreement with [Mata et al. \(2012\)](#) who found that motivation-related variables are the main predictors of attitudes towards mathematics and that teachers and the social support of peers are also highly significant in understanding these attitudes.

4. CONCLUSION AND RECOMMENDATION

Performance in mathematics among girls in secondary school s in Gem - Sub County was low as compared to other subjects, lack of interests and negative attitudes towards mathematics emerged as a major factor behind dismal performance in mathematics. Peer influence also contributed to the dismal performance among girls in mathematics. Mathematics subject teachers through the school administration should find a way of creating awareness on importance of mathematics and the need for giving it equal opportunity just like other subjects. Ministry of education should organize in service training for female teachers on best delivery methods to students while in class and employ more mathematics female teachers as well

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