



Influence of Teachers Administrative Strategies on Bridging Gender Gap in KCSE Academic Performance in Mixed Boarding Secondary Schools in Nandi North Sub-County, Kenya

Keter David Kiplagat, Dr. Kiproop David & Dr Kapkiai Moses

Kisii University, Kenya

Corresponding Author: davidketer1960@yahoo.com

Abstract: *Despite all the measures taken to give education equal gender opportunities, there is so much gender inequality in education worldwide. Discrepancies in performance between males and females, school completion rates, and participation in job opportunities are much more prevalent in some regions of the world than in others. The purpose of this study, therefore, was to explore the influence of teachers' administrative strategies on the gender gap in the academic performance of form four students in mixed secondary schools in Nandi North Sub County, Nandi County. It was driven by social constructivism theory. Given the nature of the study, a descriptive research design was adopted. The target population of this study included the sub-county directors and 6 zonal CSOs and all the 446 class teachers with a sample of 212 respondents based on Yamane's formula. Questionnaires were used to collect data. Validity was determined using expert judgment while reliability was measured using Cronbach's alpha coefficient. The results were evaluated using both inferential and descriptive statistics. The study findings indicated that classroom management strategies influence the gender gap in the academic performance of KCSE candidates. It is therefore recommended that there is a need to urgently address issues that will take education to another level and adapt measures that will ensure equity in performance for all. The focus of this change should be gender and academic performance.*

Keywords: Classroom, Management Strategies, Gender Gap, Academic Performance

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1. Introduction

Education is central to the opportunity to exercise rights, and therefore to empower women, it is selected as the key aim to accomplish the Sustainable Development Goal of fostering gender equality, the goal being to

reduce gender inequalities in primary and secondary education (UNESCO, 2017). Interventions are primarily focused on the integrated strategy of access to and standard of education, all of which contribute to gender equality. Sex disparities also influence the composition and administration of the school system, the teachers'

activities and behaviors, instructional resources, and program content lives. Education initiatives cannot fix the gender inequality issues in society, but education can have a significant influence on girls and women, boys, and men. Training can be critical for changing attitudes towards recognizing gender equality as a basic social norm (Abdul and Azeem, 2017).

Literature provides clear evidence that the gender difference persists in the academic success of students and this disparity is in favor of males. The gender disparity is a significant statistical disparity between males and females in action or disposition. This visible disparity (gender gap) is not established biologically because the male-child and the female-child are socialized right from home into a strongly gender-stereotyped society. Eddy and Brownell (2016) proposed improvements in the content, pedagogies, philosophies (the value system), and behaviors of learners, teachers, and educational stakeholders to eliminate the gender gap in student academic results. Holder, & Kessels (2017) argued that developing a positive feminist atmosphere would reduce the gender gap in academic results. A progressive feminist classroom, he states, is student-centered and non-hierarchical with a focus on groups and cooperatives.

McElvany, Kessels, Schwabe, & Kasper (2017) reported that administrative approaches for teachers were recognized globally as the most successful strategy for achieving gender equity in academic performance among students. She recommended five administrative strategies that could be adopted in gender mainstreaming, thus achieving equality regarding academic performance between males and females. The instructional techniques are, the use of classroom approaches, the use of teaching methods encouraging collaboration rather than competitiveness, the implementation of school policies, the use of gender-inclusive languages or words, the use of gender-inclusive photographs, pictures, and textual materials, and the elimination/avoidance of gender-sensitive actions or utterances in classrooms. The present study will explore the different teacher administrative strategies to bridge the gender gap in performance and to what extent these strategies are employed by high school teachers (Pirmohamed, 2016). This study will adopt classroom strategies, teaching strategies, and the application of school policies in bridging the gender gap in academic performance

Globally, debates on educational gender relations have centered on contentious allegations that teachers are systematically privileging boys over girls. Nevertheless, the literature on the student-teacher relationship has also centered on how the student results vary when a student and teacher have the same sex. Assignment to a teacher of the same sex may be important for many reasons on an educational level. It may affect student involvement or

actions, for example, through role model effects and the threat of stereotyping. Also, same-sex teachers can express specific (and self-fulfilling) aspirations to the boys and girls in their classrooms (Glock, 2016).

In Africa, Preckel, Goetz, Pekrun & Kleine (2018) conducted an initial study into how the gender gap varies across academic achievement and was related to the academic success disparity between men and women in secondary schools. The research concentrated in particular on improving the academic success of the high school and college students from the 1960s to the 1980s and found a strong difference between male and female academic performance. One drawback of this study, however, was that it failed to consider only secondary school students' academic performance and did not estimate the gap unexplained by performance differences (Diprete & Buchmann, 2013).

The gender gap in rural-level literacy rates for boys and girls, in general, was 18.3 percent for boys, according to Nigeria's Central Bank. Nevertheless, it was just 3.9 percent in favor of boys aged 6–9 (primary school ages) in the age group. That indicates that there is a gender component to educational achievement and growth in Nigeria. Other problems exist, according to the Nigerian Examination Council (2014), such as high dropout rates for female students, low grades, unwillingness on the part of female students to take part in science-based classes, and low participation in the classroom.

Twoli, Akala, and Khatete, (2015) published a report on gender gaps in learning outcomes in a developed country's mole concept. According to the findings of the study, the gender gap arising from unequal treatment of boys and girls is still visible in their success and participation in chemistry education today in Kenya and every other developing nation. The Mole Theory has been characterized as one of the most difficult concepts to teach and study throughout the high school chemistry curriculum due to its vast breadth and often esoteric nature. In Kakamega County, Kenya, researchers examined the learning outcomes of four high school students in the Mole Theory chemical area with men and girls. This calls for further study to find out the gender gap in overall academic performance.

Chebet (2016) indicated that schools for boys did higher than the schools for girls. Boys became more affiliated and interested in mathematics. Teacher and school factors had little effect on gender-related achievement in mathematics. The main recommendation was that steps need to be taken as early as possible, perhaps even in primary school, and helps to reduce socialization influences proven to contribute to gender disparities in achievement in mathematics. Implementing approaches in both the curriculum and in- and in-service instruction

would be ideal, and would further reduce gender gaps in student performance in mathematics.

In his research Mbuthi (2011) found that female students performed better in mixed secondary schools than male counterparts, whereas male students performed better in single-sex secondary schools than their female counterparts. He also noted that teachers seem to believe that math is very important to boys in low-performing schools. In line with conventional stereotypes, not one school teacher said that math was easier for girls.

Educational work in Kenya centered on the radical front whose key aim was to highlight gender differences within schooling without actually discussing the underlying social systems that enabled and even glorified this disparity. The government perceived equal opportunities in education as a viable panacea for society's glaring gender inequalities (Chege, 2011). Historical research depicts the core goal of the "fair opportunity" agenda as the creation of policies that will guarantee equitable incentives for women to enter the work market by ensuring equitable access to education. Nevertheless, the intricacies that hamper girls and women's equitable education, leading to inequality in certain life chances; can hardly be solved by access per se, without the standard of education that guarantees decent results for both girls and boys, it will be impossible to eliminate inequality in potential life prospects. For this reason, research should be done to unearth the challenges. Despite the apparent importance of the learners' gender aspects in developing meaningful learning, there is limited research on the administrative strategies of teachers in bridging the gender gap in Kenya. Most of the work conducted in Kenya has to do with the factors influencing gender success and the impact of gender difference in science learning and mathematics learning. In an attempt to fill this gap, this study sought to investigate the influence of teachers' administrative strategies on the gender gap in academic performance of mixed secondary schools in Nandi North Sub County.

1.2 Statement of the Problem

In Kenya, over the years, male candidates dominated the top one hundred candidates in KCSE performance, it is only in a few regions where the performance was in girls' favor (see Appendix) (KNEC, 2019). It means that new solutions to the gender gap continue to be emphasized. Programs targeting girls ought to be checked and reworked. Other issues that arise, such as classroom practices, teaching strategies, and school policies, marginalize a particular gender while learning needs to be further explored. This is because these problems have continued to haunt the school sector despite being resolved over time. The gender gap that exists must be

discussed more deeply because of the psychological, economic, and political effects on the sex involved that has become the female gender over the years. It is therefore against this background that the study sought to assess the influence of teachers' administrative strategies on the gender gap in the KCSE academic performance in mixed secondary schools in Nandi North Sub County.

Research Objective

To establish the influence of classroom management strategies on the gender gap in academic performance of KCSE candidates in Nandi North Sub County.

Research Question

Does teachers' classroom strategies influence the gender gap in KCSE academic performance in Nandi North Sub-county?

Theoretical Review

The paper will be guided by Lev Vygotsky's theory of social constructivism, established in 1978. The theory of Vygotsky argues that knowledge is co-constructed and that individuals benefit from each other, social constructivism is a version of cognitive constructivism which emphasizes the shared nature of learning (Chebet, 2016). Vygotsky argued that all cognitive processes exist and thus ought to be explained as consequences of social interactions and that learning is not simply the assimilation and adaptation by learners to new abilities. Social constructivism stresses the role of culture and context in the identification and awareness-raising of what occurs in society (Chege & Sakurai, 2011).

Schooling, according to Social Constructivists, is a process of socialization. This is not a passive creation of external forces-shaped behaviors, nor does it reside only inside a person (McMahon 1997). When people interact in social situations, they learn a lot. Knowledge is derived from human-environmental interactions and is stored in cultures (McDaniel, 2016). Furthermore, the intersubjectivity created by cumulative cultural and historical factors propels knowledge advancement (Danbold & Huo, 2017). Once members of a group are aware of their inter-subjective interpretations, they may find new ideas and events in the culture simpler to comprehend.

This theory is considered important to this paper as it promoted the belief that the gender difference is created in the academic atmosphere in which school makes a major contribution. From a social viewpoint, boys and girls are comparable in their mental ability and any anatomical disparities between them are significantly

outweighed by social pressure. Failure to eradicate differences of any nature in their academic achievement is likely to exacerbate the gender gap.

2. Literature Review

Classroom management, according to Evertson and Weinstein (2016), refers to measures taken by a teacher in the classroom to assist students and instructors learn more effectively. Teachers should address five essential aspects of an effective classroom with their activities, according to them. A more caring climate, cooperative relationships with students, teachers, and learners; organizing and implementing instruction in such a way as to maximize learning; encouraging learners, academic task engagements; developing and promoting learners' sociological skills; and using appropriate and appropriate interventional measures to help learners were among these characteristics. A favorable learning environment, according to Brophy (2006), is one that is good for learners and students in schools. Because of the fast growth in every area, this type of learning environment and environment may also help today's students learn more effectively.

Eddy and Brownell (2016) note that genre-sensitive teaching materials are created and used. That can be accomplished by commissioning all works of art in schools and workbooks, but it also writes stories and positions them in a strategic role for molding and positively influencing the aspirations of young and ambitious girls and boys. It ensures equal representation of female and male characters, ensures that conventional female and male gender roles are changed and, more importantly, girls and women in positions of power are portrayed.

In addition to designing and using gender-sensitive instructional tools, teachers will find contact between teacher and student as critical in promoting gender parity in the classroom. For example, research has shown that if boys keep getting a disproportionate amount of teacher time, resources, and attention, the gender gap will expand further. (Akpakwu, 2014). Boys tend to make a bigger share of contributions to all class activities, according to Akpakwu, Bua, firstly because teachers call boys more frequently than girls and secondly because the educational environment encourages boys to seek teachers' attention and encourage their participation in or dominance over class interactions.

In his research bridging the gender divide in the Classroom, Chen (2016) claimed that teachers should use comprehensive instructional guides to help create a diverse learning environment. This technology-enhanced lesson framework aims to provide comprehensive lesson plans and is structured to ensure that the instructor

ultimately acquires essential learning skills in the classroom.

Good & Brophy (2014) examined the basic skills and results of the teacher and concluded that a teacher's value was closely linked to his progress in applying management skills. Crocker and Brooker (2016) demonstrated in a study involving a comprehensive assessment of classroom management activities in 75 elementary school classrooms that higher achievement in both genders is accomplished in classrooms functioning in a business-like manner with a minimal amount of time or task disruption wasted under strong teacher supervision. Charles (2012) concluded from the classroom management research that when teachers have a specific instructional plan, they feel more in control and more professional. In an experiment, the emphasis was on investigating the effect of certain management strategies in the classroom on improving student behavior.

Victor (2015) concluded that the therapy program had resulted in a substantial change in the constructive conduct of the students, such as a decrease in non-compliance, yelling, and tantrum. In terms of the effectiveness of classroom management training, Schmidt (2006) concluded from studies that training had allowed teachers to respond to various student behaviors, attitudes, and educational needs, as well as to develop satisfactory relations with students and parents. Martin, Yin, and Baldwin (2017) conducted a study to compare male and female perspectives on classroom management style and found that males scored significantly higher in instructional management and behavioral management than female teachers, although there was no substantial difference in the management dimension. Equally, males ranked the dominant factor slightly higher than females.

3. Methodology

3.1 Research Design

The study was quantitative and adopted a descriptive research design to evaluate teachers' administrative strategies on the gender gap in academic performance. The descriptive design attempted to describe, clarify, and analyze present-day circumstances (Bryman, 2016). The object of descriptive analysis was to analyze a phenomenon that arises at a given time and location (Creswell, Klassen, Plano & Smith, 2011). Descriptive work is concerned with current environments, procedures, systems, discrepancies, or partnerships, views expressed on-going processes, or apparent patterns.

3.2 Target Population

The target population for the study was all secondary school teachers in Nandi North Sub-County, Nandi County. The region is made up of 55 public secondary schools with a population of 446 teachers. Therefore the target population of this study included the sub-county directors and 6 zonal CSOs and all the 446 teachers. Teachers were selected based on their knowledge of the strategies adopted to curb gender disparities in schools.

3.3 Sampling Size and Sampling Technique

The sample size of this analysis was based on the 1967 formulae to obtain a sample of 212 teachers. In selecting the 212 teachers, the study adopted stratified and proportionate simple random sampling techniques. Simple random sampling would cause the chosen population to be assigned equal probability. The study must collect a list of all selected community students and teachers and then assign a number to each. The researcher would then select the samples using the proportionate random sampling technique.

Table 1 Sample Size

Zones	Number of schools	Target population	Sample Size
Kabiyet	10	85	40
Kabisaga	7	57	27
Sangalo	9	73	35
Kurgung	6	47	22
Chepterwai	9	71	34
Kabiemit	14	113	54
Total	55	446	212

3.4 Research Instruments

Primary data was collected using questionnaires. The research used open as well as close-ended questionnaires to compile respondent results. In addition, document analysis was used to assess the student KCSE result of both boys and girls. The study was specific to 5 years 2016 to 2020. This enabled the researcher to get facts on gender gaps in KCSE performance Nandi North Sub-County.

3.5 Data Processing and Analysis

Quantitative results were evaluated using both descriptive statistics and inferential ones. Descriptive statistics including frequency, percentage, mean and standard deviation. Inferential statistics were applied

through a T-test that was used to analyze the significant difference in academic performance of boys and girls. On the other hand, qualitative data generated were analyzed and categorized per research questions and reported in a narrative form. Finally, data were presented using Tables and charts.

4. Results and Discussion

Influence of Classroom Management Strategies on Gender Gap in Kcse Academic Performance

The purpose of this study was to see how classroom methods and gender differences affected academic performance in mixed secondary schools in Nandi North Sub County. To achieve this goal, the data was measured using frequencies, percentages, mean, and standard deviation. This is presented in Table 2

Table 2 Descriptive Analysis Results of Classroom Management Strategies

Statements		SA	A	U	D	SD	M	Std
Use of gender-sensitive teaching materials in class is successful in closing the academic achievement gap	F	59	57	6	12	14	3.91	1.27
	%	39.9	38.5	4.1	8.1	9.5		
Teacher conduct management in the classroom is effective in driving the educational attainment of boys and girls	F	61	58	11	18	0	4.09	0.99
	%	41.2	39.2	7.4	12.2	0		
Teacher's efficiency in time management enhances retention of both boys and girls in school	F	75	45	19	4	5	4.22	1.002
	%	50.7	30.4	12.8	2.7	3.4		
Teacher's enhancement of classroom climate is effective in driving educational attainment of boys and girls	F	74	43	10	16	5	4.11	1.14
	%	50.0	29.1	6.8	10.8	3.4		
Classroom arrangement create a conducive environment for learning to both boys and girls	F	82	44	13	8	1	4.34	0.900
	%	55.4	29.7	8.8	5.4	0.7		

From the descriptive statistics Table 2, 78.4 percent of respondents agreed that use of gender-sensitive teaching materials in class is successful in closing the academic achievement gap while 17.6 percent disagreed and was endorsed by an average mean of 3.91. The respondents also agreed at 80.4 percent that teacher conduct management in the classroom is effective in driving the educational attainment of boys and girls, while 6.1 percent disagreed; this had an average mean of 4.09 as to their responses. Moreover, 81.1 percent of respondents agreed with an average mean of 4.22 that teacher's efficiency in time management enhances retention of both boys and girls in school, of which 6.1 percent disagreed. In addition, 79.1 % of respondents agreed with an average of 4.11 that Teacher's enhancement of classroom climate is effective in driving educational attainment of boys and girls, out of which 14.2% disagreed. Finally, 85.1% of the respondents agreed with an average mean of 4.34 that classroom arrangement create a conducive environment for learning to both boys and girls.

This implied that the respondents are in agreement that classroom strategies plays a key role in gender gap in the academic performance of mixed secondary schools in Nandi North Sub County. These findings are similar to

that of Eddy and Brownell (2016) note that genre-sensitive teaching materials are created and used. That can be accomplished by commissioning all works of art in schools and workbooks, but it also writes stories and positions them in a strategic role for molding and positively influencing the aspirations of young and ambitious girls and boys. Chen (2016) claimed that teachers should use comprehensive instructional guides to help create a diverse learning environment. This technology-enhanced lesson framework aims to provide comprehensive lesson plans and is structured to ensure that the instructor ultimately acquires essential learning skills in the classroom. Martin, Yin, and Baldwin (2017) found that males scored significantly higher in instructional management and behavioral management than female teachers, although there was no substantial difference in the management dimension. Equally, males ranked the dominant factor slightly higher than females.

Gender Gap in Academic Performance in Schools

The study's goal in this part was to discover the gender difference in mixed secondary school academic performance in Nandi North Sub County. To attain this goal, respondents were asked if there was a difference in performance between males and girls. The results are presented in Table 3

Table 3: Gender Gap in Academic Performance in Schools

Difference between boys and girls	Frequency	Percentage
Yes	121	81.8
No	27	18.2
Total	148	100

As indicated in Table 3, 121 (81.8%) responded that there is a difference between boys and girls performance while 27 (18.2%) disagreed. This implies that there is a gender difference in academic performance of mixed secondary schools in Nandi North Sub County

Further, when asked to explain why there is a difference between boys and girls performance, one director indicated that:

“There is a trend of girls’ outperformance and boys’ underperformance in education across the world. He goes ahead to state that girls are outperforming not only at the school and college levels, but also in higher education. However, the position is rather more complex since underachievement varies from society to society and even within a society.”

Another respondent pointed out that:

“Boys develop gender stereotypes according to which girls are perceived as academically superior with regard to motivation, ability, performance, and self-regulation”

In one of the supplementary aspects in the questionnaire, one director of studies observed that:

“Communities believed that males are academically inferior to girls. In addition,

there is a stereotype where boys performed worse in writing, reading and arithmetic when they were told that they usually performed worse than females”

There is a clear gender disparity in KCSE performance between boys and girls, according to the opinions expressed. Many studies have shown that in underdeveloped nations, girls have made significant improvements in all areas of schooling and outperform boys. In the industrialized world, however, surveys show that boys are outperformed by girls in school, college, and university education (McDowell, 2020). Similarly, Hung et al. (2012) claim that female pupils in the United Kingdom outperform boys in school, particularly at the secondary and higher secondary levels. According to Tshabalala and Ncube (2016), girls have higher grades than boys in school, college, and even university. It is also said that in terms of educational success, girls in the United States of America consistently outperform boys. Datta (2014) found that female students performed better than male pupils and received high ratings in Kenyan culture. Similarly, the outcomes of a research done in Zimbabwe by Kabeer (2019) indicated that girls outperformed boys in terms of educational attainment at both the high school and college levels.

KCSE Academic performance

The study sought to assess the student academic performance for 5 years, that is, between 2016 and 2020. This enabled the researcher get facts on gender gaps in KCSE performance Nandi North Sub-County. This is presented in Table 4.

Table 4: Overall Academic Performance: Mean, Standard Deviation and Variance per subject by gender across the five years (2016-2020).

Subjects	Girls			Boys			Total		
	Mean	Std. Dev.	Variance	Mean	Std. Dev.	Variance	Mean	Std. Dev.	Variance
English	37.76	2.41	5.79	37.50	2.57	6.60	37.61	2.49	6.19
Kiswahili	43.09	4.73	22.33	42.58	4.98	24.77	42.81	4.85	23.54
Mathematics	18.45	2.01	4.02	24.92	1.89	3.58	22.00	1.95	3.82
Biology	29.94	5.38	28.92	34.31	6.13	37.52	32.23	5.75	33.12
Chemistry	21.08	2.12	4.50	24.89	2.80	7.85	23.16	2.48	6.16
Physics	34.62	3.36	11.27	36.85	3.71	13.79	36.23	3.59	12.88
History	40.60	3.73	13.93	48.27	4.18	17.46	45.08	3.97	15.73
Geography	36.46	3.99	15.89	42.69	4.28	18.29	40.38	4.02	16.20
CRE	50.19	7.40	54.75	50.08	7.50	56.26	50.14	7.44	55.38
Home Science	50.58	3.39	11.46	44.07	3.38	11.44	50.08	3.39	11.48
Agriculture	34.50	3.95	15.64	39.73	4.22	17.77	36.19	6.07	36.84

Table 4 summarizes the overall KCSE performance in all secondary schools in Nandi North Sub County. The standard deviation of the sample for all the subjects ranged between 2.01 and 7.40 among the girls while it was 1.89 and 7.50 among boys, which can be described as an extreme range. The standard deviation for all the subjects ranged between 1.95 and 7.44. For all the subjects the mean ranged between 18.45 and 50.58

among girls (for which Mathematics scored lowest while Home Science scored highest). Among boys in all the subjects, the mean ranged between 24.89 and 52.34 (for which Mathematics scored lowest while history scored highest). In the overall totals, the means of all the twelve subjects ranged between 22.00 and 51.09. Mathematics was the lowest and history scored the highest. This is indicated in figure 1.

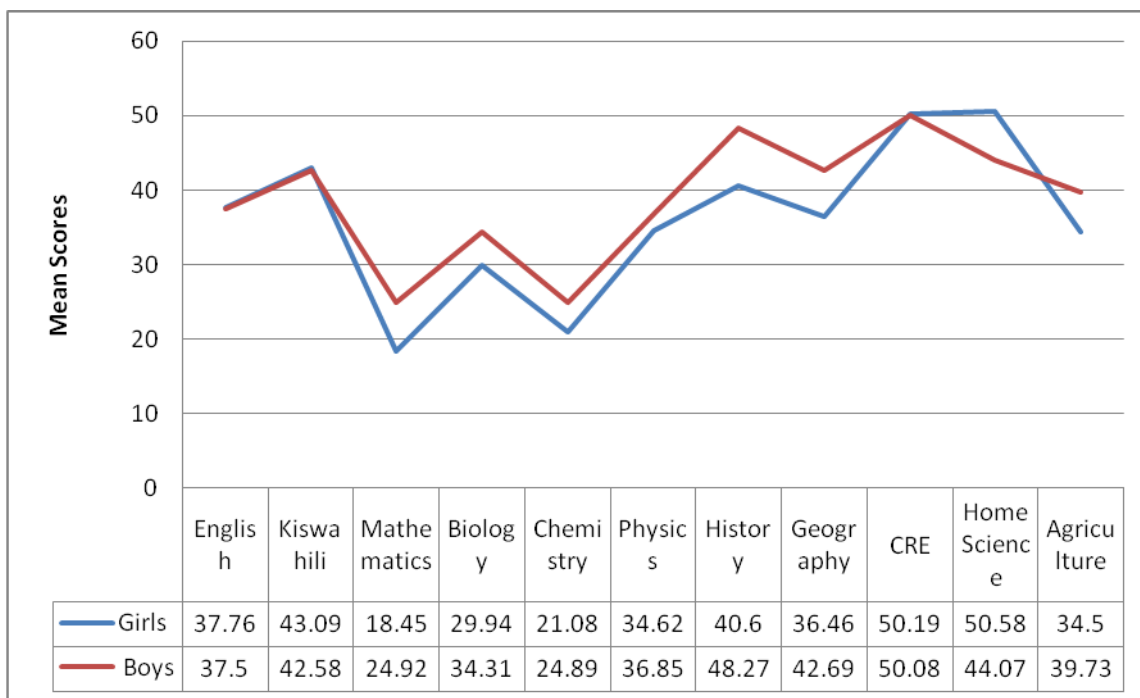


Figure 1: Overall Academic Performance: Mean, Standard Deviation and Variance per subject by gender across the five years (2016-2020).

As indicated in figure 1, the overall performance across the subjects during the 5 year period shows that both girls and boys performed almost equally in English, Kiswahili and CRE. Boys performed well in Chemistry, Biology and History & Government while girls performed better in Home Science. Also, during the 5 year period, among the five subject clusters, boys performed well in Mathematics, Science and Arts subjects. Girls scored

slightly better than boys in Technical subjects while both boys and girls were almost at par in Language subjects.

4.8 Significance(p)of difference between means of Boys and Girls

In comparing the means highlighted above, between means among boys and girls, a T test was done. This is presented in Table 5

Table 5: Significance(p)of difference between means

	Girls (Mean=38.32)	Male (Mean=40.81)	Total (Mean=39.85)	Overall Total (Mean=39.56)
Girls		.0001	.0012	.0014
Male	.0001		.0072	.0000
Total	.0012	.0072		.0000
OverallTotal	.0014	.0000	.0000	

As indicated in table 5, in both totals and overall totals, the overall mean score performance between girls and boys for the years 2016 to 2020 with reference to the KCSE summary was significant (p 0.01 and p 0.05 levels). This suggests that there was no substantial difference between girls and boys in terms of any of the disciplines.

5. Conclusion and Recommendations

5.1 Conclusion

According to the findings of the study, using gender-sensitive teaching materials in the classroom is beneficial in closing the academic achievement gap; teacher conduct management in the classroom is effective in driving the educational attainment of boys and girls,

teacher's efficiency in time management enhances retention of both boys and girls in school and classroom arrangement create a conducive environment for learning to both boys and girls.

5.2 Recommendations

The following suggestions have been made based on the findings, findings, and conclusions:

There is an urgent need to address concerns that will take education to a new level and adopt measures that will ensure equity in performance for everyone, an education that will assure change by reviewing the past and adapting to current gender and academic achievement difficulties. Gender and academic achievement should be at the forefront of this shift.

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- The government needs to implement strategies in the which would help to reduce gender differences in academic achievement.
- The Ministry of education should spearhead gender-balanced programs and interventions that respond to boys' and girls' educational needs.
- Lastly, the Ministry of education needs to bring in policies and programs aimed at expanding interventions such as empowerment programs that equip girls and boys with skills to enable them balance feminine/masculine traits with positive ones, in a manner that does not subjugate the innate nature.
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