Gender and Education: Evaluating Gender Mainstreaming Practices in Curriculum Implementation in Kenya

Table of Contents

Gender and Education: Evaluating Gender Mainstreaming Practices in Curriculum Implementation in Kenya

Gender and Education: Evaluating Gender Mainstreaming Practices in Curriculum Implementation in Kenya

List of tables

List of Figures

Gender and Education: Evaluating Gender Mainstreaming Practices in Curriculum Implementation in Kenya

Abbreviations/Acronyms

APHRC   African Population and Health Research Center

CGD   Center for Global Development

CSOs   Civil Society Organizations

EFA   Education for All

EMIS   Education Management Information System

FAWE   Forum for African Women Educationalists

FGDs   Focus Group Discussions

GIC   Gender Integration Continuum

KIIs   Key Informant Interviews

KNBS   Kenya National Bureau of Statistics

KNEC   Kenya National Examinations Council

MoE   Ministry of Education

NER   Net Enrollment Ratio

NGEC   National Gender Equality Commission

QCA   Qualitative Comparative Analysis

SAGAs   Semi-Autonomous Government Agencies

TPD   Teacher Professional Development

UNESCO   United Nations Educational, Scientific and Cultural Organization

Gender and Education: Evaluating Gender Mainstreaming Practices in Curriculum Implementation in Kenya

Acknowledgments

Proposed citation:

Gender and Education: Evaluating Gender Mainstreaming Practices in Curriculum Implementation in Kenya

Executive Summary

Globally, there are notable concerted efforts to promote access, equity, and inclusivity in education, which have improved school enrollment for marginalized and disadvantaged populations. These initiatives include Education for All (EFA) goals, Millennium Development Goals (MDG) 2 and 3, and Sustainable Development Goals 4 and 5. Gender equality is also a priority of the African Union Agenda 2063. Indeed, Goal 17 targets that by 2063 full gender equality will be attained in all spheres of life. The Continental Education Strategy for Africa 2016 – 2025 emphasizes gender equity, equality, and sensitivity throughout education. Lastly, the East Africa Community Treaty covers issues of mainstreaming gender into all EAC endeavors. Since independence, policy and legislative reforms have been implemented in Kenya as the Government seeks to promote gender access, equality, and equity in the education sector. In the constitution of Kenya, women have the right to equal treatment with men, including the right to equal opportunities in political, economic, and social activities. In Kenya, the enhanced access to school is credited to the Free Primary Education (FPE) policy, the Free Day Secondary Education (FDSE) policy, and subsidized secondary school. The 100% transition policy from primary to secondary school, which was rolled out in 2018, also complements the FPE, FDSE, and subsidized secondary school initiatives. Some of the achievements include improved gross enrollment rate (GER) and net enrollment rate (NER) at both primary and secondary school levels. For instance, the GER has increased over the years to 104% in 2018. The FDSE policy has increased the GER rates from 42.5% in 2008 to 70.3% in 2018 (Government of Kenya, 2016). These efforts have contributed to the attainment of gender parity in education.

According to the 2020 Basic Education Statistical Booklet (Republic of Kenya, 2020), gender parity was achieved at the pre-primary and primary education levels. Gender disparities however still exist at the secondary education level. In 2020, the Gender Parity Index at pre-primary, primary and secondary school levels was 0.97, 0.96 and 1.01 respectively. According to the report, although 16 counties of the 47 have achieved gender parity at secondary school level, there are gender disparities in favour of girls in 18 counties with the highest recorded in Vihiga (1.2), Elgeyo Marakwet (1.12), Machakos (1.11), Meru (1.11) and Kisumu (1.1). On the other hand, 13 counties recorded disparities in favour of boys with the highest recorded in Mandera (0.54), Wajir (0.58), Turkana (0.62) Garissa (0.68), and Samburu (0.74). Other initiatives that have been implemented to promote gender equality include the launch of the National Gender and Equality Commission which is responsible for reducing gender inequalities, coordinating, and facilitating mainstreaming of gender issues, and the inclusion of persons living with disability and other marginalized groups in the national development agenda. In addition, the gender-in-education unit coordinates and ensures that the Ministry of Education is gender-responsive in its activities.

Despite the milestones to improve education access, retention, transition, and increased participation of women in leadership and legislative positions, research evidence indicates persistent regional disparities, especially for marginalized populations such as those facing

negative social norms. This indicates that there are gaps and challenges in the efforts to effectively mainstream gender issues in the education sector. Gender mainstreaming is operationalized as gender sensitivity in developing and implementing school programs, curriculum development, governing and managing schools, teaching and using learning materials, budgeting, and activity implementation. Within the education sector the challenges of effectively mainstreaming gender issues are attributed to ineffective gender-sensitive pedagogical approaches and learning environments, curriculum deficiencies, lack of professional development training, child poverty, child labor, gender-based violence, and negative social norms. Teacher training is the means through which teachers amass theoretical knowledge and practical skills to effectively mainstream gender in teaching and learning. However, there are notable gaps and challenges as the pre-service and in-service programs do not adequately prepare teachers to mainstream gender issues in teaching and learning to promote access, retention, and transition. In the Kenyan context, the Education and Training Sector Gender Policy 2015 is the key guideline for promoting gender equality in and through education at all levels. The main objective of the Gender Policy in Education is to promote gender equality issues in access, equity, and equality to enhance empowerment and participation, and civic engagement for all. It is based on the fundamental principle of equal participation between women and men, and girls and boys, and ultimately ensure inclusiveness in issues of gender, empowerment, and mainstreaming of needs of all individuals. The policy is anchored in the following six thematic areas: access, quality, safety and security, nurturing and mentoring, equity, governance, and management.

The policy seeks to:

1. Reduce gender inequalities in access, participation, and achievement at all levels of education.
2. Support equal participation of women and men as decision-makers in shaping the educational policies and practices for sustainable development.
3. Increase participation in education for disadvantaged girls and women, boys, and men, including Orphans and Vulnerable Children (OVC), people with special needs, people living in Arid and Semi-arid Lands (ASALs), and the rural and urban poor.
4. Ensure a gender-responsive curriculum design, development, and implementation;
5. Improve participation in research, SMT subjects, and STEM courses by providing mentoring programs to all learners in the education sector.
6. Ensure a safe and secure learning and work environment that is free of any form of sexual harassment and gender-based violence.

With the review of the 2015 Education and Training Sector Gender Policy (gender policy henceforth) commissioned by the Ministry of Education Kenya in 2021, it was vital to generate evidence that evaluates the implementation of the gender policy so that empirical evidence informs the policy review process. Some of the notable challenges with the 2015 gender policy were the lack of a structured implementation, monitoring, and evaluation plan for the policy. MoE was keen

on using an evidence-based approach to inform the gender policy review and implementation. This approach aligns with the African Population and Health Research Center's mission and goal of generating evidence to drive policy action. APHRC, thus partnered with the Ministry of Education to co-create a study to evaluate gender mainstreaming practices in curriculum implementation in Kenya.

About the Study

The **overall objective** of this study was to provide policy-relevant evidence for policy action on how well gender issues are mainstreamed during curriculum implementation in basic education in Kenya.

The specific objectives of the study were to:

1. Examine how the teacher-training curriculum prepares teachers to implement gender-mainstreaming strategies (such as actual training skills and processes) within the basic education sector policies and guidelines.
2. Examine how gender mainstreaming is practiced inside the classroom during the teaching and learning process.
3. Assess the relationship between effective pedagogical practices that mainstream gender issues and students' school attendance, choice of subjects, and academic performance.
4. Explore the extent to which key school programs and strategies put in place by the government and/or private sector promote gender equity in basic education.

Three research questions guided the study:

1. How does the teacher-training curriculum in Kenya respond to the basic education sector gender policies with regard to gender mainstreaming in teaching and learning?
2. Does the gender policy in education (as viewed from the lens of teacher pedagogical strategies and practices inside the classroom) enhance gender mainstreaming, and how do the observed strategies relate to students' (boys/girls) school attendance, choice/preferred subjects, and academic performance?
3. What strategies (policies, practices, guidelines, decrees, and curriculum) have been put in place by both government and/or private sector to mainstream gender issues in the curriculum, and to what extent do such strategies promote gender mainstreaming in basic education?

Methodology

Study Design

The study utilized a concurrent mixed-methods approach to address the research questions. Quantitative data was derived from the student questionnaire, which generated data on students'

background characteristics, homework support, choice of subjects, school environment, absenteeism, and participation in extra tuition. Additionally, the institutional questionnaire collected data on the school background, facilities, enrolment, charges, staffing, and governance. Classroom observations for mathematics, English, and science were also conducted in 103 schools. The main goal of the observations was to examine the extent to which teachers use gender-inclusive pedagogical approaches. Teachers were evaluated on gender-responsive language use, classroom interactions, teaching and learning materials, as well as classroom setup and environment. Further, a knowledge, skills, and attitude survey was administered to pre-service teachers and tutors to assess their level of knowledge, and perceptions on gender mainstreaming practices. In depth interviews were conducted among students and teachers. Key informant interviews were conducted with the secondary respondents Quality Assurance and Standard Officers (QASOs), Curriculum Support Officers (CSOs), and Ministry of Education officials at the national level in order to understand gender mainstreaming practices and policy implementation in teacher training and basic education. Lastly, we conducted a content analysis of the Diploma primary and secondary teacher training curriculum (TTC) to examine how gender issues are addressed in the TTC curriculum.

Study setting

Data was collected from institutions of basic education across 10 counties in Kenya with the highest rates of child poverty - above 60% (KNBS, 2018). The counties were Busia, Garissa, Mandera, Marsabit, Tana River, Turkana, Samburu, Wajir, Nairobi, and West Pokot. These counties were selected because children, particularly girls, are marginalized due to child poverty levels. Additionally, vulnerable boys and girls have diminished chances of access to inclusive education because they belong to schools that serve poor households in low-resource contexts, prevalently located in Arid and Semi-Arid regions. In addition, data was collected from 7 Diploma Teacher Training colleges in Kiambu, Kakamega, Mombasa, Garissa, Nyeri, and Machakos counties.

Sampling Strategy

The overall sampling strategy considered school performance in the most recent national examinations - the Kenya Certificate for Primary Education (KCPE) for primary schools and Kenya Certificate for Secondary Education (KCSE) for secondary schools. The schools were grouped into three categories based on their performance – low, middle, and high performing. Thereafter, quintiles were created with schools falling in the lower two (40%) quintiles constituting low-performing schools, those in the 3rd quintile forming the middle-performing schools, and those in the upper two quintiles (top 40%) forming the best-performing category. The final sample comprised 250 schools – 125 primary and 125 secondary, with a target of 25 schools per county, and 5000 students-20 students per school. In addition, we included 26 pre-primary institutions attached to the sampled primary schools in the respective counties.

Gender and Education: Evaluating Gender Mainstreaming Practices in Curriculum Implementation in Kenya

Response Rate

The response rate on the student questionnaire for the targeted 250 primary and secondary schools across the ten counties was 93.24%%, with a total of 4,662 learners of the targeted 5,000 reached in these schools, with a further 26 pre-primary institutions out of a targeted 24 in the respective counties. The response rate for the institutional questionnaires was 100%. The 6.76% deficiency in the response rate for the student questionnaire was attributed to low enrollment in some of the schools in the ASAL regions, student absenteeism due to lack of school fees, participation in 2022 national election campaigns, and nomadic pastoralism. Insecurity in Mandera, Samburu, and Wajir also hindered the completion of daily field activities.

Analytical Approaches

Both the quantitative and qualitative analysis techniques were used in the analysis of data for the purposes of triangulation of the findings. Quantitative data analysis incorporated descriptive and inferential analyses in responding to the research questions, including the use of means, frequencies, proportions, ratios, and various statistical tests. We used the Wilcoxon Signed Rank tests to assess differences in the mean tallies of classroom observation items. T-tests were used to assess the differences in the mean for normally distributed data of gender-equitable teaching practices. Chi-square tests were used to test differences in proportions or for categorical associations between variables. Regression analyses using the Generalized Estimating Equations (GEE), Generalized linear models and binary logistics regression models were used to assess for relationship between the gender pedagogical practices in classrooms and student learning outcomes, school attendance and subject choice. The results were presented using graphs and tabulations. All the qualitative data (key informant interviews and focus group discussions) were tape-recorded and transcribed verbatim in English. Thematic analysis allowed the study team to collate similar views from various categories of respondents and thus deduce general perceptions of the phenomenon of interest. A coding report organizing the qualitative data into themes of interest was then generated and used to summarize key findings.

Summary of Findings

Research question 1: How does the teacher-training curriculum in Kenya respond to the basic education sector gender policies with regard to gender mainstreaming in teaching and learning?

- The TTC pre-service trainees had some understanding of gender-equitable teaching and learning practices from an equity perspective; however, there were notable gaps in knowledge among the trainees on several aspects of gender-inclusive practices in teaching.
- Gender mainstreaming in basic education is not a component of training in the entire Diploma primary and secondary TTC curriculum.

- There is also a misalignment between the assessment framework used by TTC tutors where tutors assess gender-inclusive teaching during teaching practicum assessment, whereas teacher trainees are unaware that it is an assessment component.
- The TTCs tutors practiced gender equity in their teaching practices in the TTC classrooms.
- The pre-service trainees' understanding of gender mainstreaming was limited to giving equal chances to boys and girls during teaching.

Research question 2: How do teacher pedagogical practices enhance gender mainstreaming? How do the observed practices relate to students' school attendance, choice of subjects, and academic performance?

- In pre-primary and primary schools there were no significant differences in the way teachers used gender responsive communication strategies and gender inclusive participation in their classrooms; however, at the secondary level there were significant differences in the use of gender responsive communication strategies in favor of boys. Teachers engaged boys more than girls. There was also a lack of gender-equitable pedagogical practices that encouraged the participation of girls in the observed mathematics, English, and science classes.
- Students' school attendance was inconsistent. At the primary level, the main reasons for absenteeism of both boys and girls were domestic responsibilities, sickness, and lack of food while at the secondary level, the main reasons were school fees problems and sickness. For girls, the other main challenge was childcare challenges for parenting, and pregnant girls, which impacted their school attendance. On the other hand, boys' absenteeism from school was attributed to paid work outside the home.
- Teacher attendance was also inconsistent across the schools.
- The majority of boys and girls in the targeted secondary schools opted to select humanities subjects. A small proportion of students opted to select Physics as an optional STEM subject. Of this proportion, more boys than girls opted to select physics.
- Findings on the associations between gender equitable teaching practices and students school attendance and academic outcomes revealed that:

At Primary level:
- On average, the performance in English was increased by 5% if the frequency of gender equitable practices towards boys and girls during class was increased by a unit ($p = 0.036$).
- A unit increase in gender mainstreaming compliance in the school would result in a doubling of the English performance ($p < 0.001$).
- Performance in all the subjects was better if the schools had library facilities than in schools that did not have library facilities.
- The odds of attending schools was 4.3 times better if a school increased the number of gender mainstreaming compliance items by a unit ($p = 0.026$).
- The odds of school attendance were increased by 87% if a school had a school feeding program than to a primary school that did not have a school feeding program ($p = 0.010$).

- The odds of primary school attendance were increased by 3.1 times if a teacher utilized a gender responsive classroom environment (p =0.034).

At secondary level:
- Performance in Biology, English, Mathematics and Physics was increased by 74%, 30%, 75% and 91% respectively upon increase in the number of times boys and girls were engaged equally by the teachers in the classroom (p<0.001)
- Performance in all the subjects was better in the schools that had library facilities than in schools that did not have library facilities.
- Performance in Biology, Chemistry, English and Mathematics was better among schools that had school feeding programs than in schools that did not have a school feeding program by 36%, 44%, 62% and 62% respectively.
- The odds of secondary school attendance were increased by 3.9 times if gender equitable interactions were enhanced during teaching (p<0.001).
- The odds of selecting Geography as an optional subject was decreased by 18% if the Pupil Teacher Ratio (PTR) increased by a unit, holding other factors constant
- The odds of choosing Chemistry were increased by 7 times if the subject teacher was very easy to approach than if the subject teacher was not easy to approach.
- The odds of selecting Physics was increased by 3.5 times if the subject was considered applicable to the intended future career than if it was not applicable to the intended future career (p<0.001).

Research question 3: What strategies (policies, practices, guidelines, decrees, and curriculum) have been put in place to mainstream gender issues in the curriculum, and to what extent do such strategies promote gender mainstreaming in basic education?

- More than 50% of public and private primary and secondary schools did not have guidelines on sexual harassment and gender-based violence for teachers in the schools.
- Between 40% - 50% of the public and private primary and secondary schools did not have guidelines for sexual harassment and gender-based violence for students in the schools. The majority of the schools that indicated they had guidelines could not avail them to the research team.
- More than 98% of the schools had separate toilet facilities for boys and girls; however, the majority of the schools did not have separate toilets for learners with special needs.
- At the pre-primary level, the teaching staff was predominantly female (82%), whereas, at the primary and secondary levels, the proportion of male teachers was more than that of females at 54% and 75% respectively.
- At the primary and secondary levels the majority of male teachers were allocated to teach STEM subjects.
- Quality Assurance and Standards Officers addressed gender issues during school visits in 60% of primary and 46.9% of secondary institutions. The focus on gender issues during

school visits by the Public Health Officers (PHO) was low in both primary 36.6% and secondary 22.1%.

● The composition of the Board of Management (BOM) and the Parent's Association (PA) in both private and public primary and secondary schools was predominantly male.

Policy messages from the research findings

Based on the study findings, we propose policy recommendations and strategic interventions in line with each thematic area of the 2015 education and training sector gender policy

Gender inclusive teacher training:

● Include engendered instructional approaches in the training modules in the Diploma Teacher Education Curriculum Guides.

● Gender mainstreaming should be taught as a stand-alone unit and/or integrated into the teaching methodology in subject areas.

● Gender mainstreaming should be an outcome of the assessment in the courses and practicum experience.

● Provide capacity building (coaching, mentorship, and modeling) on gender mainstreaming for teacher training institutions and continuous professional development for in-service teachers.

● Allocation of resources to support the implementation of gender mainstreaming in all areas of teacher education.

Access:

● Institutionalize targeted interventions to increase the enrollment and attendance for boys and girls based on regional disparities and student gender. For instance, have programs to reduce pregnancies at secondary school levels as well as programs to support pregnant and parenting adolescents.

● Sensitize communities on the availability of resource centers and schools that support SNE and promote enrollment and retention, and transition of children with special needs.

● Build the capacity of teachers and school administrators on the availability of resource centers; identify resource centers and, provide support (including best teaching practices) to students with special needs.

● Establish and equip resource centers at county and sub-county levels to evaluate and identify learners with special needs.

● Equip basic education institutions with facilities and trained teachers to support students with special needs.

Equity:

- Enhance school management structures such as BoM and Parents Associations that are gender inclusive – formation, representation, training, planning, and implementation.

Quality Education:

- Provide capacity building for in-service teachers on gender-inclusive teaching practices in basic education for both in-service and pre-service teachers.
- Strengthen quality assurance and monitoring for effective implementation of gender equity in education and training at the college and school levels.
- Enhance supervisory mechanisms (head teachers, QASO, and CSOs) to ensure effective gender mainstreaming practices in the classroom.

Safety, security, and gender-based violence:

- Require/mandate learning institutions to have guidelines on safety, security, and gender-based violence accessible to students, teachers, and non-teaching staff.
- Sensitize teachers, students, and non-teaching staff (including the board of management and parents associations) on the institutional guidelines and establish mechanisms for ensuring compliance (monitoring and evaluation), e.g., on student diaries, posters, and seminars).
- The positive on school safety in regards to toilets should continue to be encouraged.
- Training on gender-based violence and sexual harassment for teachers, Quality Assurance and Standards Officers (QASO), and Curriculum Support Officers needed to build their own capacity to handle such cases as well as build the capacity of other teachers, students, and colleagues.
- Establish and implement standard operating procedures for reporting GBV and abuse in and out of school for learners, teachers, and non-teaching staff and provide legal redress for perpetrators of abuse and GBV.

Nurturing and mentoring:

- Deliberate efforts should be made to encourage girls to pursue STEM subjects and careers at an early age (formal mentorship programs to encourage STEM careers, role modeling).
- Encourage female teacher trainees to pursue STEM-related subjects and male teacher trainees to pursue humanities and languages.
- Provide incentives and create an enabling environment for students, particularly females, to participate in research and STEM courses.
- Disseminate gender-friendly information on STEM degree programs and innovation, careers, job creation, and employability to learning institutions.

Governance and management:

- TSC and relevant stakeholders should ensure equal representation of male and female teachers in school and in leadership positions.
- Encourage and empower female teachers and parents to take leadership positions in schools (administrative, HoD, BoM, and PA).
- Encourage and empower female students and parents to take up leadership positions in schools.
- Continue to encourage equal representation of students in leadership positions.

Gender and Education: Evaluating Gender Mainstreaming Practices in Curriculum Implementation in Kenya
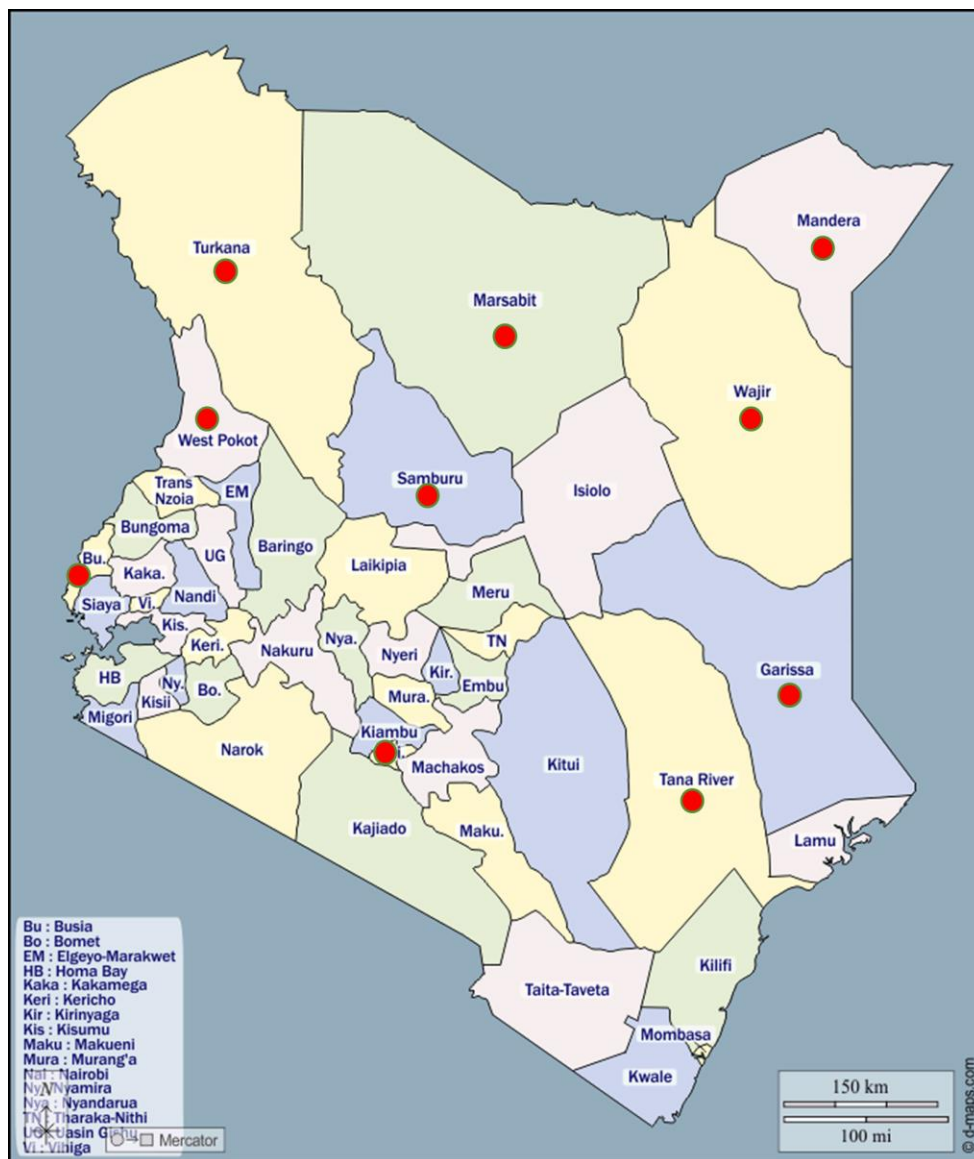
Figure 1: Map of Kenya showing the target study Counties

Gender and Education: Evaluating Gender Mainstreaming Practices in Curriculum Implementation in Kenya

1. Introduction

1.1 Background

Global policies and education interventions implemented to achieve the Education For All (EFA) goals, Millennium Development Goals (MDG) 2 and 3, and the Sustainable Development Goals 4 and 5 have focused on achieving gender parity in access to education. (Aikman & Rao, 2012; United Nations, 2015). SDG 4 focuses on ensuring inclusive and equitable education and promoting lifelong learning opportunities for all, while goal 5 seeks to achieve gender equality and empower all women and girls. These education policies and interventions have consequently resulted in improved access to education. For instance, the primary school net enrolment rate in the low middle-income contexts improved from 83% in 2000 to 91% in 2015, with Sub-Saharan Africa (SSA) recording the highest improvement of 20 percentage points from 60% in 2000 to 80% in 2015 (UN, 2015). Gender parity in access to education is also a priority of the African Union Agenda 2063. Goal 17 targets that by 2063 full gender equality will be attained in all spheres of life. The Continental Education Strategy for Africa (CESA) 2016 – 2025 emphasizes gender equity, equality, and sensitivity throughout education. The East Africa Community Treaty prioritizes issues of gender equality into all EAC endeavors. In Kenya, since independence, policy and legislative reforms have been implemented as the Government seeks to promote gender access, equality, and equity in the education sector. Kenya has also recorded improvements in school enrollment for both girls and boys attributed to the policies and strategies initiated by the Ministry of Education (Mumiukha et al., 2015). In 2003, the Kenyan government instituted the free primary education policy, which mandated the provision of free primary education to all children of school-going age (6 – 15 years and adults (above 16 years) who had never had an opportunity to attend school (Republic of Kenya, 2003b). The Free Day Secondary Education policy was introduced in 2008 as part of the government's efforts to make the costs of secondary education affordable and promote access, transition, and academic outcomes (Ministry of Education, 2007).The government provides subsidies or capitation grants to all secondary school students enrolled in public day schools. The constitution of Kenya recognizes basic education as a fundamental human right of every Kenyan child, thus providing for the right to free and compulsory primary education, including persons with disabilities, by increasing the number of eligible boys and girls transitioning into and completing secondary education (Republic of Kenya, 2010). The Basic Education Act (2013) guarantees the right of every child to free and compulsory basic education. The 100% transition from primary to secondary school policy was rolled out in 2018 to complement the FDSE policy. Together, these policy interventions have improved access to education, evident through the improved Gross Enrollment Rates. Since the launch of the FPE policy in 2003, the GER has increased over the years to 104% in 2018. The FDSE policy has increased the GER rates from 42.5% in 2008 to 70.3% in 2018. The primary school Net Enrollment Ratio (NER), the proportion of pupils completing primary education, have all registered

remarkable improvements from 67.8%, 57.7%, and 78.5% in 2000 to 88.2%, 80.3,% and 94.4% in 2014 respectively, as a result of policies such as the free primary education (Government of Kenya, 2016).

The Kenyan government continues to promote access, equity, and inclusivity in education through initiatives to reduce disparities based on gender, disabilities, and location (rural and urban). For example, the Education and Training Sector Gender Policy launched in 2015 (Republic of Kenya, 2015), aims to promote gender equality in terms of access, equity, and equality in the education sector as well as to enhance empowerment for effective participation and contribution to national development by all. The National Gender and Equality Commission (2011) is an Act of Parliament that was constituted in August 2011 with the purpose of reducing gender inequalities, coordinating, and facilitating the mainstreaming of gender issues, persons living with disability, and other marginalized groups in the national development agenda. The Ministry of Education has established a gender-in-education unit to coordinate and ensure gender responsiveness in its activities (Government of Kenya, 2016). Currently, the State Department for Gender in the Ministry of Public Service and Gender is tasked with promoting gender mainstreaming in national development processes and championing the socio-economic empowerment of women. The State Department's mandate is guided by the National Policy on Gender and Development (NPGD). The NPDG's main objective is to achieve gender equality and women's empowerment in national development, thus increasing the participation of women and men, boys and girls, as well as vulnerable and marginalized groups, contributing to the attainment of sustainable development (Republic of Kenya, 2019). The Government of Kenya has also implemented policies and laws such as affirmative action that have increased the number of women in wage employment from 29.5% in 2000 to 36.5% in 2014 and enhanced representation in parliament (Kaimenyi, Kinya, & Chege, 2013).

In addition to policy and legislative reforms, the Government has rolled out several interventions, such as low-cost boarding schools and mobile schools in Arid and Semi-Arid Lands (ASALs). The Ministry of Education released national guidelines for school re-entry in early learning and basic education as part of efforts to improve retention, transition, and completion rates. The guidelines are critical in supporting school continuity for learners who drop out of school for reasons such as early pregnancies, drug and substance abuse, gender-based violence, inhibitive cultural practices, child labor, special needs, and disabilities, among others (Ministry of Education, 2020). Other interventions include the re-entry for girls who drop out of school due to pregnancy, among other reasons, affirmative action in bursary allocation, and the appointment of qualified female administrators. The aforementioned policy interventions have resulted in increased enrollment rates, gender parity, and enhanced educational opportunities for children in Kenya.

However, there are notable persistent gender-related challenges regarding retention, transition, and performance for all eligible children. Empirical research reports high levels of gender disparities in enrolment between regions with regard to access, retention, completion, performance, and

transitions (Muigai, 2020). An evaluation of the 2019 gender policy highlights gaps in the promotion of gender equality in Kenya that are attributable to disparities in education and economic opportunities, representation, and adequate access to health (Muigua, 2020). Other researchers that have examined the implementation of gender mainstreaming in the public sector in Kenya highlight challenges that inhibit effective implementation. For instance, Nyachiengá (2010) examined challenges that have derailed the processes of efforts to mainstream gender in the public sector in Kenya, including lack of political goodwill from the government, slow processes in developing gender policies by various ministries, inadequate budget and technical staff training and sensitization on gender-related issues. According to Nyachiengá (2010), several sociocultural factors hinder the mainstreaming process, including patriarchy, gender stereotyping, lack of awareness, and literacy disparities. Moreover, Muyomi (2014) examined the level of staff awareness on the implementation of gender mainstreaming in the Ministry of Planning and Devolution and the Ministry of Labour and Social Security Services in Nairobi County. The findings indicated that there was minimal effort from the government as regards creating awareness on gender issues among its employees. There were notable gaps in resource mobilization, particularly the allocation of human resources, male dominance in ministries, and low functionality of gender mainstreaming policies within ministries**.**

1.2 Study Objective

The overall objective of this study was to provide policy-relevant evidence for action on mainstreaming gender issues during curriculum implementation in basic education in Kenya.

The specific objectives were to:

1. Examine how the teacher-training curriculum prepares teachers to implement gender-mainstreaming strategies (such as actual training skills and processes) within the basic education sector policies and guidelines.
2. Examine how gender mainstreaming is practiced inside the classroom during the teaching and learning process.
3. Assess the relationship between effective pedagogical practices that mainstream gender issues and students' school attendance, choice of subjects, and academic performance.
4. Explore the extent to which key school programs and strategies put in place by the government and/or private sector promote gender equity in basic education.

The present study was guided by the following questions:

1. How does the teacher-training curriculum in Kenya respond to the basic education sector gender policies with regard to gender mainstreaming in teaching and learning?
2. Does the gender policy in education (as viewed from the lens of teacher pedagogical strategies and practices inside the classroom) enhance gender mainstreaming, and how do

the observed strategies relate to students' (boys/girls) school attendance, choice/preferred subjects, and academic performance?

3. What strategies (policies, practices, guidelines, decrees, curriculum) have been put in place by both government and/or private sector to mainstream gender issues in the curriculum, and to what extent do such strategies promote gender mainstreaming in basic education?

1.3 Theoretical Framework

This research is situated within the fundamental principles of the Gender Integration Continuum (GIC). This theoretical framework allows for categorization of how policies and practices treat gender norms and equality in their design and implementation, into "gender blind", "gender aware", (IGWG, 2017). Gender blind"is used in reference to teacher training policies and practices which ignore gender norms and considerations. In other words, such policies and practices were designed without prior analysis of the culturally-defined economic, social, and political roles, responsibilities, rights, entitlements, obligations, and power relations associated with being male and female and the dynamics between and among men and women, boys and girls."Gender aware refers to policies and practices which deliberately address both unforeseen and anticipated gender-related effects in their design and implementation. An important guiding principle for all gender-integrated interventions is to be gender aware. The gender-aware dimension is further categorized into transformative, accommodating, and exploitative (see Figure 2 below).
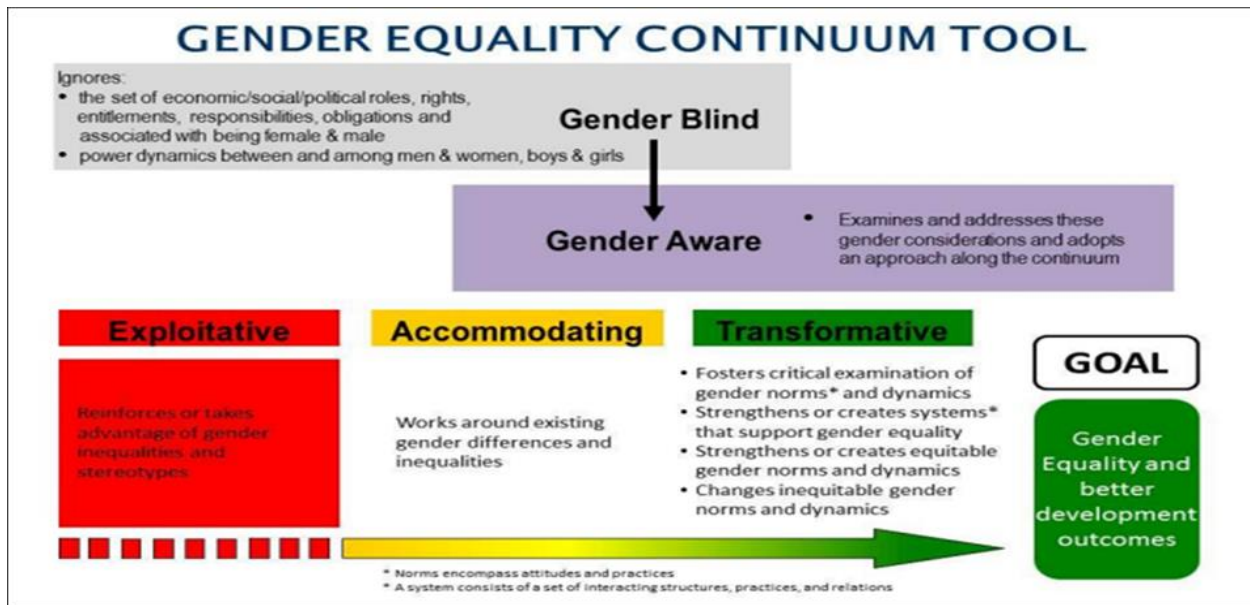
Figure 2: Theoretical framework

In line with the GIC framework, converging evidence indicates that for access, equity, and equality to be attained fully, and to break the systemic barriers and challenges that women and girls as well as marginalized learners (with disabilities and from low socio-economic status) continually face,

government systems need to be gender aware in the implementation of policies and practices. This approach should guide the efforts to find solutions to overcome these challenges and establish mechanisms for breaking barriers. This framework informed our analysis of the policies and practices to establish their status as gender blind or gender aware (along the spectrum of exploitative, accommodating and transformative). This subsequently shaped the possible interventions towards developing gender transformative policies and practices as illuminated in the recommendations generated from this study.

2. Literature Review

Gender mainstreaming encompasses the consistent and systematic integration of gender equality issues into the development and implementation of policies, plans, programs, and projects at all levels, including national, community, school, and classroom (Daly, 2005; Forum for African Women Educationalist [FAWE], 2018).This focuses on men and women with family as the backdrop and alongside the labor market. In the education sector, it entails gender sensitivity in developing and implementing school programs, curriculum development, governing and managing schools, teaching and using learning materials, budgeting, and activity implementation as an ongoing activity (Frei & Leowinata, 2014). Gender mainstreaming promotes gender equality, thus contributing to equal human rights, social justice, and achieving social and economic objectives (United Nations, 2002). Gender mainstreaming in policy analysis and development entails ensuring that gender considerations are routinely included in policy assessment, options, and impacts, along with considerations for socioeconomic dimensions (United Nations, 2002). Notable patterns of gender mainstreaming in countries include the spreading the responsibility of gender across units or departments, the development and implementation of anti-discrimination policies, action plans on gender equality, sexual harassment and violence-free policies, systematic gender analysis tools that guide the policy design and implementation process, continuous gender analysis to highlight gender inequality - producing gender-disaggregated statistics, use of gender impact assessment methods, and gender budgeting (Daly, 2005). Daly further identified three varieties of gender mainstreaming, namely: he integrated approach; limited transversality, and fragmented mainstreaming. Specifically, the integrated approach whereby the responsibility for gender equality is extended to all/most actors involved in public policy and is embedded across all institutions in society. Mainstreaming in the form of limited transversality allocates the responsibility of gender mainstreaming to more government ministries to implement a program around gender mainstreaming. Lastly, fragmented mainstreaming is where gender equality issues are confined to a small number of policy domains or programs.

Gender-mainstreaming calls for education stakeholders and institutions to consider the living situations, needs, and perspectives of girls and boys, female and male teachers during planning and the execution of support (Frei & Leowinata, 2014). As an ongoing process, it involves various activities, including the identification of gaps and raising awareness in gender equity, promoting and building support for change, resource mobilization and provision, capacity building, as well as monitoring and evaluation of the process. Capacity building through gender training is critical for gender mainstreaming as it enhances awareness, competence, knowledge, and practical skills about gender equality, consequently leading to changes in self-perception, relational behavior changes, beliefs, and problem-solving skills. Models of effective gender mainstreaming in institutions globally exhibited characteristics such as inclusive gender considerations everywhere at institutions, present active champions in institutions, committed leadership, clear policies, strategies, and guidelines to inform institutional culture, user-friendly tools easily accessible to

staff and adaptability to different contexts, the continuous gathering of data (qualitative and quantitative), knowledge, and sharing lessons, open communication and accountability frameworks (Frei & Leowinata, 2014).

According to Frei and Leowinata (2014), several factors contribute to challenges of access and participation in education and quality of learning culture and traditions. These include child labor, cost to attend schools, poor health, and puberty, long distances to school, teenage pregnancy, parenting adolescents. Moreover, many institutions have limited education resources – overcrowded classrooms, schooling in shifts, lack of water sanitation and hygiene facilities, no separate toilets for boys and girls, lack of emergency sanitary wear, lack of adequate learning materials pens, textbooks, exercise books, lack of adequately trained male and female teachers, lack of role models and structured mentorship programs. Lastly, safe and insecure school environments due to gender-based violence and sexual harassment from students, staff, and teachers in the schools, and teacher misconduct.Teachers play a critical role in ensuring all children can participate fully in society and have equal opportunities in society therefore, they need adequate capacity building on gender mainstreaming in education (UNESCO, 2001).

Research reports indicate that Kenya has attained national gender parity in enrollment at the primary school level. However, there are persistent regional disparities across the country due to access, retention, completion, performance, and transition challenges. It is noted that the gender gap widens as learners advance in the academic ladder, particularly for access and academic achievements in Science, Technology, Engineering, and Mathematics (STEM) (Ministry of Education Science and Technology, [MoEST], Kenya, 2015). Research reports indicate that evaluation of the implementation of the gender mainstreaming policy has mainly focused on the representation of women in various institutions and less on whether and how the mainstreaming is being implemented in the classrooms in basic education settings (Kaimenyi et al., 2013; Republic of Kenya, 2016). In most cases, these studies highlight implementation hiccups as a major challenge.

According to Omukhulu et al. (2016), only about 71% of Technical and Vocational Education and Training (TVET) officials in charge of gender mainstreaming activities in their institutions agreed that the policy was being implemented as intended, especially in providing bursaries to female students joining STEM-related courses. Further evaluation revealed that despite a 43% increase in enrollment rates from 2009 to 2011, the gender parity index had reduced from 0.957 in 2009 to 0.804 in 2011. Further, the study showed that course choices were still heavily dependent on gender, with more males enrolled in engineering and STEM-related courses and more female students in business-related courses.

The limited involvement of policy users in developing, reviewing, and evaluating the gender mainstreaming policies is also highlighted as a challenge to successfully implementing the same (Ochieng, 2014). For instance, the study found that 70% of respondents in higher education

institutions were unsure of whether the gender mainstreaming policy had been implemented fully or not. Similarly, Combat (2014) showed that despite there being more female teachers in municipal primary schools in Kenya, they tend to hold fewer administrative positions, with the main barriers being a lack of role models and mentors, male-centered attitudes about leadership, family responsibilities, gender socialization, the influence of patriarchy and belief in meritocracy.

There is limited research evidence from Kenya on the guidelines for implementing gender-responsive and sensitive curricular, pre-service and in-service teacher training on gender mainstreaming as part of efforts to promote gender equity and equality in education. The findings of the study by FAWE (2009) indicated that teachers who were trained and utilized gender-responsive tools and strategies in their teaching felt empowered and demonstrated more control in their instructional strategies and their ability to create a more open and safe learning environment for their students. Furthermore, the Child-Friendly School concept implemented by the government in partnership with UNICEF supports the use of inclusive strategies to cater to the learning needs of every child and address their vulnerabilities. Research further denotes that beyond the personal transformation; teachers noted that the use of gender-responsive practices resulted in improved academic outcomes for girls, change in student behaviors and attitudes, greater participation of girls in the classroom processes, school committees, and leadership roles, and higher gender awareness among boys (Bever, 2014).

While Kenya has made significant progress toward gender equality, there remain institutional, structural, and cultural barriers to the participation of women in higher levels of education, entering the workforce, and attaining high-level management or decision-making roles (Frosina & Mwaura, 2016). Gender-based violence in the form of rape, assault, defilement, sexual harassment, emotional abuse, and female genital mutilation disproportionately affects women and girls and is a major public health and human rights crisis in Kenya. According to UNESCO (2016), school-related gender-based violence comprises acts or threats of sexual, physical, or psychological violence occurring in and around schools, perpetrated as a result of gender norms and stereotypes and enforced by unequal power dynamics (UNESCO, 2016). The government has instituted policies that target eliminating GBV and sexual harassment and has made GBV and sexual harassment a criminal offense. These include the Sexual Offences Act 2006, Protection against Domestic Violence Bill 2015, Family Protection Bill 2001. Sexual harassment of girls is also prevalent in school settings, with perpetrators being mainly male teachers and students, community members, and caregivers. This has impacted girls' attendance and participation in learning activities effectively (Elimu Yetu Coalition, 2003). About two out of five school principals in Southern and Eastern Africa acknowledge that primary school children in their schools have experienced sexual harassment (UNESCO, 2015). Findings from the Kenya 2019 Violence against Children Survey (Republic of Kenya, 2019) indicate that childhood sexual violence was experienced by 15.6% of females and 6.4% of males before age 18. Further, 18.4% of females experienced the first incident of childhood sexual violence at age 13 or younger, 26.6% between

age 14-15, and 54.9% between ages 16-17. Other legislative efforts include the Children's Act 2022, which seeks to safeguard children from abuse, violence, and exploitation.

The Kenya Institute of Curriculum Development (KICD) has attempted to address gender issues by revising the basic education teaching and learning materials to be gender inclusive and responsive. Despite these efforts, persistent challenges call for attention to the Education and Training Sector Gender Policy in the education sector to address pedagogy, teaching/learning processes, and the entire student-teacher interaction in classrooms and lessons. Current practices typically reflect gender biases, stereotypes, and insensitivity. The learning outcomes of boys and girls are influenced by the hidden curriculum presented through the school practices, behaviors of teachers and students, as well as the school community, which influences a student's worldview and decision-making (Kiptoo-Tarus, 2016). Evidence from various studies conducted in Kenyan primary and secondary schools reported that teachers pay more attention to boys than to girls, which accounts for the individual differences in learning outcomes (Ngware et al., 2012). According to Skelton et al. (2007), teachers have different behavioral expectations for boys and girls within the schools. On the one hand, girls are expected to be appreciative, calm, conscientious, cooperative, mannerly, and dependable. While on the other hand, boys are expected to be active, adventurous, aggressive, assertive, curious, energetic, innovative, creative, enterprising, and independent. These behavioral expectations may inhibit student engagement in the learning process.

Kiptoo-Taurus (2016) examined the effect of gender mainstreaming in secondary education on girls' psychological adjustment and career aspirations in four counties (Turkana, Narok, West Pokot, and Elgeyo Marakwet) in Kenya. The study also examined the extent of implementation of the gender mainstreaming policy in girls-only schools in select counties in Kenya. The findings revealed that the head teachers were significantly aware of gender mainstreaming in education. Students' awareness of gender mainstreaming in education was moderate, and their knowledge was low. The head teachers noted that the Ministry of Education circulated the gender in education policy documents/manuals to all schools in the counties, and head teachers were mandated to oversee the policy implementation. However, the head teachers acknowledged not receiving professional development training or sensitization on gender mainstreaming and how to implement the policy guidelines. Additionally, the findings indicated that gender mainstreaming was positively correlated with the girl's psychological adjustment and career aspirations. In another study, Forssman and Jacobsson (2016) examined the implementation of gender mainstreaming strategic plans in secondary education in Kisumu County through a qualitative field study. The gender mainstreaming strategic plan sought to reduce disparities in enrollment and retention of boys and girls in school and to promote increased women and men's access to life management education. The findings of this study indicated that in Kisumu County secondary schools, the implementation of the gender mainstreaming strategic plan was lacking. Moreover, teachers were unaware of the details of the plan. Notably, there was high inequality between boys and girls in Kisumu County, which was attributable to high poverty levels. Lastly, family factors, including

household responsibilities, affected girls more than boys. Several people, including parents, career advisors, and teachers, influenced the choice of subjects among these students. Even though career advice was generally provided to all students, girls' career aspirations were not well guided. The available research evidence shows that there are gaps in knowledge on the extent of implementation of the gender mainstreaming policy and practices in the basic education setting. This thus calls for multifaceted approaches that include gender-responsive policies and community engagement to change retrogressive gender norms.

It is worth noting that teacher shortage is a big challenge across Kenya's public schools and more so in marginalized and hardship communities due to deployment imbalances, insecurity concerns in certain regions, and teacher preferences (Abdi, 2019; Odhiambo et al., 2015; Scott-Villiers et al., 2015; TSC 2019; Uwezo, 211). More recent data from the Teachers Service Commission (TSC) projected a teacher shortage of 97,214 in 2022 and 96,612 in 2023 for primary and secondary schools (The Teacher Service Commission [TSC], 2015). Consequently, teacher shortage results in inadequate content coverage which contributes to low academic achievement. Some of the coping strategies that schools employ to mitigate the trained teacher shortage include recruiting trained and untrained temporary teachers under the board of management, increasing the teaching workload of existing teachers , merging classes per grade, and/or or congesting classrooms (Joyce et al., 2014; Kasau, 2012; Ruto et al., 2010). Abdi (2019) reported that in Garissa, Mandera, and Wajir, there is a heavy reliance on teachers from other counties because of a high shortage of teachers from the area. This then presents the challenge of the high turnover of teachers as these teachers return to their home counties, which negatively influences student-learning outcomes. Therefore, these dynamics of class sizes, teacher shortage, and teacher training may affect how gender issues are mainstreamed in the classrooms in basic education. In addition to this, the distribution of gender of teachers may influence gender-mainstreaming practices. For instance, research reports a high ratio of female teachers in urban versus rural areas (Ministry of Education Science and Technology, 2000). Moreover, female teachers predominantly teach the lower primary classes. The present study captured these dynamics and generated data from both male and female teachers to ensure that the data is representative and can be generalizable to issues of gender mainstreaming by both male and female teachers.

To summarize, the available evidence indicates that the Ministry of Education Kenya is committed to advancing gender equity and equality in the education sector through policy and legislative reforms that seek to enhance gender mainstreaming, curb sexual harassment and gender-based violence, promote school re-entry, improve teaching and learning material as well as infrastructure in schools and increase recruitment to curb teacher shortages. Despite these efforts, there remain several gaps in the ongoing implementation of the Education and Training Sector gender policy of 2015. First, there is limited evidence on the extent to which teachers in basic education in Kenya use gender-inclusive teaching practices and how gender-inclusive teaching practices influence access and participation in basic education. Notably, there is limited capacity building for teachers on gender-inclusive teaching practice; therefore, future research can examine the direct impact of

capacity building on student learning outcomes, access, and participation in education. Secondly, the available evidence indicates that in-service teachers and institutional heads lack capacity building on gender mainstreaming, i.e., in teaching practices, classroom management, and governance, and there is also a lack of a structure for monitoring and evaluating gender mainstreaming. Thirdly, there is limited knowledge on the extent to which institutions of basic education observe and are compliant with the gender mainstreaming policy stipulations in their programs, guidelines, and decrees as the majority of education stakeholders (head teachers, teachers, teaching and non-teaching staff other management structures were not aware of the gender policy. There is also limited evidence on the extent to which the gender policy in education caters for marginalized groups of learners, such as learners with special needs and other vulnerable populations. Teacher training is an important sector that imparts the pre-service teacher trainees with content knowledge and pedagogical content knowledge to use best practices of gender inclusion in teaching-learning. The present research addressed some of the noted gaps in the literature by examining how the teacher-training curriculum in Kenya responds to the basic education sector gender policies with regard to gender mainstreaming in teaching and learning. Secondly, the study examined whether the teacher's pedagogical strategies and practices inside the classroom are gender inclusive and how these relate to student school attendance, choice of preferred subjects, and academic performance. Lastly, the study explored the strategies that have been put in place by the government/private sector to mainstream gender issues in the curriculum to promote gender mainstreaming in basic education.

2.1 The Education and Training Sector Gender Policy 2015

The Education and Training Sector Gender Policy (gender policy henceforth) was rolled out in 2015 after the revision of the 2007 gender policy. The main objective of the gender policy is to promote gender equality in and through education at all levels. It is guided by the fundamental principle of equal participation between women and men, and girls and boys, as well as inclusion.

The six objectives of the policy are:

Gender and Education: Evaluating Gender Mainstreaming Practices in Curriculum Implementation in Kenya

1. Reduce gender inequalities in access, participation, and achievement at all levels of education.
2. Support equal participation of women and men as decision-makers in shaping the educational policies and practices for sustainable development.
3. Increase participation in education for disadvantaged girls and women, boys, and men, including Orphans and Vulnerable Children (OVC), people with special needs, people living in Arid and Semi-arid Lands (ASALs), as well as the rural and urban poor.
4. Ensure a gender-responsive curriculum design, development, and implementation;
5. Improve participation in research, SMT subjects, and STEM courses by providing mentoring programs to all learners in the education sector.
6. Ensure a safe and secure learning and work environment that is free of any form of sexual harassment and gender-based violence.

The policy statements are premised on the following six thematic areas each of which have policy statements:

1. Access: To increase participation of all learners, including those who are out-of-school in gender-responsive education programs.

   a. Expand access to gender-sensitive and responsive quality education.
   b. Make all educational institutions gender, age, and disability-friendly.

2. Equity: To enhance gender equity at all levels of education,

   a) Provide equitable resources, opportunities, and participation for all learners regardless of age, gender, culture, and disability.
   b) Ensure gender-equitable provision of APBET and ACE opportunities.

3. Quality education: Eliminate gender inequalities by providing quality education and training.

   a) Institutionalize a gender-responsive quality curriculum in the sector.
   b) Institutionalize a gender-responsive and inclusive quality curriculum for teacher education and development.
   c) Mainstream gender in teacher education and development
   d) Ensure a flexible gender-responsive SNE curriculum

4. Safety, security, and gender-based violence

   a) Create a safe and protective learning and work environment to prevent sexual harassment and gender-based violence at all levels of the education and training sector
   b) Provide a safe and secure environment for all learners.

c) Develop and implement policies that address GBV at all levels of education and in the workplace.

d) Establish modalities for dealing with Sexual harassment and Gender-Based Violence in the education sector

5. Nurturing and mentoring

   a) Integrate gender-responsive, nurturing, and mentoring aspects in the delivery of education

   b) Provide mechanisms to enhance participation in STEM by all learners at all levels of education.

   c) Facilitate gender-balanced participation in STEM and innovation in academic programs.

   d) Institute mechanisms to ensure participation and retention in STEM and Innovation courses.

6. Governance and management

   a. Enhance gender equality and gender responsiveness in governance, management, and research in the education sector.

   b. Establish structures for good governance practice and management that ensure gender equality at all levels of the education sector.

   c. Collaborate and network with partners and stakeholders to promote gender-sensitive and gender-responsive education awareness.

   d. Streamline advocacy on gender equality and training programs for gender mainstreaming.

   e. Ensure adequate and gender-balanced staffing in Special Needs Education (SNE) institutions.

   f. Ensure gender empowerment through responsive budget allocation for the provision of essential materials.

   g. Ensure gender balance in deploying teachers and instructors at all levels

   h. Facilitate gender empowerment at all levels.

   i. Improve the data and information management to ensure gender sensitivity and disaggregation by age and sex at all levels**.**

(Ministry of Education Science and Technology, MoEST, 2015)

3. Methods

3.1 Study Design

The present study utilized a concurrent mixed-methods approach to explore the relationships between measures, such as gender-equitable pedagogical approaches on students' school attendance, academic outcomes, and choice of subjects. We also examined the measures put in place by the government and private sector to promote gender mainstreaming in basic education. Additionally, we examined the extent to which basic education institutions adhered to the stipulated education sector gender policies and guidelines. Lastly, we further how the primary and secondary teacher training curriculum in Kenya responds to basic education sector gender policies with regard to gender mainstreaming in teaching and learning. We used regression analyses to examine the existing relationships between academic performance, school attendance and student's subject choice across various school, learner, class and pedagogy factors outlined above.

3.2 Study setting

Data for the present study was collected from institutions of basic education spread over 10 counties in Kenya with the highest rates of child poverty - above 60% (KNBS, 2018). The counties were Busia, Garissa, Mandera, Marsabit, Tana River, Turkana, Samburu, Wajir, Nairobi, and West Pokot. These counties were selected because children, particularly at-risk gender groups (girls), are marginalized due to high child poverty levels. Additionally, vulnerable boys and girls have diminished chances of access to inclusive education because they belong to schools that serve poor households in low-resource contexts. Data was also collected from 7 Diploma Teacher Training colleges in the following Counties; Kiambu, Kakamega, Mombasa, Garissa, Nyeri, and Machakos.

3.3 Participants

Primary data was collected from pre-primary PP2, primary grade 6 and secondary school Form 2 students. Participants were drawn from public and private, single and mixed-gender, and day and boarding schools. Other study participants included in-service teachers, head teachers and principals, pre-service teachers, teacher training tutors/lecturers, county/national education curriculum support officers, quality assurance officers, and officials at the Ministry of Education and the Teacher Service Commission. Secondary data sources included KCPE and KCSE assessment data from 2017 to 2022 and the Diploma primary and secondary teacher training curriculums.

Gender and Education: Evaluating Gender Mainstreaming Practices in Curriculum Implementation in Kenya

3.4 Sampling Strategy

The overall sampling strategy considered school performance in the most standardized national examinations of academic year 2021- the Kenya Certificate for Primary Education (KCPE) for primary schools and Kenya Certificate for Secondary Education (KCSE) for secondary schools. In particular, schools were grouped into three categories based on their performance - low, medium, and high performing. Primary and secondary schools were listed in each of the 10 counties according to the league tables (best performing to worst performing). Thereafter, quintiles were created with schools falling in the lower two (40%) quintiles constituting low-performing schools, those in the 3rd quintile forming the middle-performing schools, and those in the upper two quintiles (top 40%) forming the best-performing category. Table 1 highlights the distribution of schools categorized based on performance (low, middle, and high) in the 2021 national examinations for each county. The proportions presented refer to those of all schools as well as those of the sampled schools. A sample of 250 schools (25 in each county, i.e. 13 primary schools and 12 secondary schools) was targeted and 5,000 students (i.e. 20 students in grade 6 or Form 2 depending on the level). The final sample comprised 250 schools – 126 primary and 124 secondary schools meaning that we achieved a 100% response rate at school level. The categorization was done for each level separately for each county. The categorization was useful during the random selection of schools in each county to ensure that proportions attributed to each of the categories were taken into consideration in the drawing of the sample. The total number of schools from the ten counties was 3,320 schools in primary level and 980 in secondary level, from which the sampled schools were obtained. The sample allocations were based on random assignment at county level for each school level through probability proportional to size with respect to performance quintiles and the type of school. The sampling weights for school level (school weights) were computed based on the total number of schools, the school type and performance quintile at the county level against the number of schools sampled, numbers by school type, and performance quintiles. The student level weights were computed through a product of school weights and sampled students against total grade specific enrolment (i.e. Grade 6 for Primary, and Form 2 for Secondary school levels). A total of 4,655 students responded to the student survey, i.e. 2,303 in primary grade 6 and 2,352 in secondary form 2, this comprised of 93.1% response rate as we targeted 5,000 students. Table 1 portrays the proportions of school's performance against proportions of samples achieved by performance and by counties.

Table 1: Categorization of all schools and sampled schools by performance quintiles

	Primary		Secondary	
	All schools 2021 performance	**Sampled schools performance in 2021**	**All schools 2021 performance**	**Sampled schools performance in 2021**

Gender and Education: Evaluating Gender Mainstreaming Practices in Curriculum Implementation in Kenya

	Bottom 40%	Middle 20%	Top 40%	Bottom 40%	Middle 20%	Top 40%	Bottom 40%	Middle 20%	Top 40%	Bottom 40%	Middle 20%	Top 40%
Busia	40.4	19.7	40.0	50.0	21.4	28.6	40.5	20.3	39.3	41.7	16.7	41.7
Garissa	40.1	20.3	39.6	50.0	8.3	41.7	40.0	20.0	40.0	46.2	30.8	23.1
Mandera	40.2	20.1	39.7	27.3	27.3	45.5	40.4	34.0	25.5	28.6	35.7	35.7
Marsabit	40.0	20.0	40.0	38.5	23.1	38.5	41.5	19.5	39.0	50.0	16.7	33.3
Wajir	40.2	20.1	39.7	46.2	15.4	38.5	40.0	20.0	40.0	54.6	9.1	36.4
West Pokot	40.1	20.0	39.9	50.0	14.3	35.7	40.1	20.4	39.5	41.7	25.0	33.3
Tana River	40.3	20.1	39.6	23.1	30.8	46.2	43.2	29.7	27.0	58.3	16.7	25.0
Turkana	40.2	19.9	39.9	33.3	41.7	25.0	41.4	19.0	39.7	46.2	15.4	38.5
Samburu	40.3	20.2	39.5	33.3	25.0	41.7	40.9	20.5	38.6	50.0	16.7	33.3
Nairobi	40.0	20.0	39.9	50.0	16.7	33.3	41.3	18.8	39.9	38.5	15.4	46.2
Total	**40.2**	**20.0**	**39.9**	**40.5**	**22.2**	**37.3**	**40.8**	**20.7**	**38.5**	**45.2**	**20.2**	**34.7**

3.5 School Response Rates

The response rate of schools targeted for the study across ten counties was 100%, a total of 250 schools. 4,662 learners were reached, representing a 93% response rate. Table 2 highlights the school and learner response rates for the primary and secondary levels. Through oversampling in some of the counties we reached the anticipated number of schools for both primary and secondary school levels. In addition, we also reached 26 ECD institutions attached to the targeted primary schools. The contextual issues contributing to low response rates in some counties included general low enrollment in some schools in the ASAL regions, teacher absenteeism due to participation in election activities, student absenteeism due to lack of school fees, participation in campaigns, and nomadic pastoralism. Insecurity was also a major challenge that affected data collection activities in Mandera, Samburu, and Wajir. Attacks and kidnappings hindered the completion of daily field activities, and the team had to constantly be on the watch and plan to change course based on the alerts.

Gender and Education: Evaluating Gender Mainstreaming Practices in Curriculum Implementation in Kenya

Table 2: Primary and Secondary school response rates

County	Number of schools[1]	Response rate (schools)	Learners per county	Response rate (learners)
BUSIA	26	104%	512	102%
GARISSA	25	100%	444	89%
MANDERA	25	100%	463	93%
MARSABIT	25	100%	482	96%
NAIROBI	25	100%	472	94%
SAMBURU	24	96%	463	93%
TANA RIVER	25	100%	443	89%
TURKANA	25	100%	452	90%
WAJIR	24	96%	430	86%
WEST POKOT	26	104%	501	100%
Total	**250**	**100%**	**4662**	**93%**

[1]**Primary and secondary schools**

3.6 Data collection procedures

Prior to data collection the research team obtained research permits from the APHRC internal research ethics committee. Additional research permits were obtained from the Africa Medical and Research Foundation (AMREF) Ethics and Scientific Review Committee and the National Commission for Science, Technology and Innovation (NACOSTI). Permission to access schools was given by the Ministry of Education Kenya. Data were collected from June to September of 2022 by a team of 60 enumerators recruited from the respective target counties. The enumerators were rigorously trained over a duration of 5 days to administer various data collection tools with

high fidelity (Appendix 1). Prior to adminstering any data collection tool the enumerators sought written consent from the participants. The headteachers gave consent for the learners in their schools to participate in the study. This was followed by the enumerators seeking verbal assent from the learners.

The enumerators administered the student questionnaires individually in quiet and open spaces inside a classroom or within the school compound. The head teachers or the designated administrators, CSOs, and QASOs officials were interviewed in quiet spaces in offices in their institutions. See Table 3 for a summary of the tools utilized in the study. The enumerators first obtained verbal consent from minors and written consent from adult participants before proceeding with interviews. For classroom observations, the enumerators filmed the designated class sessions after seeking consent from the institutional heads and the individual teachers being observed. The classes to be observed were selected randomly. Only one subject was observed per school. Prior to filming the class sessions, the enumerators explained to the teachers the purpose of the classroom observation was for research and not an evaluation of their teaching ability.

Table 3: Study tools, target respondents, and type of data collected

Study tool	Target respondents	Data collected
Institutional questionnaire	School heads/administrators in each of the school sampled	School background information, school facilities, enrolment for the current school year, school charges, staffing, and governance.
Student questionnaires	Grade 6 and Form 2 students in each of the sampled school	Student background information, social-economic status, homework, and homework support, choice of subjects, school environment, absenteeism, and extra tuition.
Classroom observation rubric	PP2, grade 6 and Form 2 teachers. Tutors in teacher training colleges (TTCs).	Gender and inclusion equitable practices in the classroom: language use, lesson planning, teaching, and learning materials, asking questions, group work, demonstration or practical lessons, feedback to students, classroom set up and environment.
TTC tutor knowledge skills and attitude survey	Tutors in Diploma Teacher training colleges	Level of knowledge of gender mainstreaming practices by tutors

Teacher trainee knowledge skills and attitude survey	Pre-service teacher trainees in TTCs	Level of knowledge of gender mainstreaming practices by teacher trainees
Qualitative guides (Key Informant Interviews)	In-service teachers Curriculum Support Officers Quality Assurance Officers Pre-service tutors (TTCs and Universities) Ministry of Education – Director of teacher education, Kenya Institute of Curriculum Development	In-depth understanding of gender mainstreaming practices, policy implementation (successes, challenges, and opportunities)
Qualitative guides (Focus Group Discussions)	Pre-service teachers (TTCs and Universities) Students in primary school Students in secondary school	In-depth understanding of gender mainstreaming practices, policy implementation (successes, challenges, and opportunities)
KCPE/KCSE mean scores for Mathematics, English and Science Subjects for years 2017-2021 (Secondary data sourced)	Student's performance	Mean scores per school per year and per target subject

3.7 Description of the Diploma in Teacher Training Colleges Curriculum and analysis

A content analysis was conducted on the curriculum designs of the Diploma in Primary and Early childhood teacher education (DECTE). The curriculum designs were published in 2021 by the Kenya Institute of Curriculum Development. The main objective of the curriculum design is to prepare pre-service teachers to effectively facilitate learning at the early childhood, primary, and secondary levels of basic education anchored within the competence-based curriculum. The design emphasizes the following aspects; formative assessment, structured micro-teaching, longer practicum training, and professional courses emphasizing experiential and reflective learning to develop appropriate pedagogical content knowledge. The curriculum is according to the following courses

Gender and Education: Evaluating Gender Mainstreaming Practices in Curriculum Implementation in Kenya

Professional learning areas	Integrated content, and pedagogical learning areas
1. Child development and psychology 2. Curriculum Studies 3. Educational Resources 4. ICT integration in education 5. Educational assessment 6. Communication and Research Skills 7. Inclusive education 8. Educational leadership and management 9. Sociological and philosophical foundations of education 10. Historical and comparative foundations of education 11. Micro-teaching 12. Practicum	1. English 2. Kiswahili 3. Mathematics 4. Science and Technology 5. Agriculture 6. Home Science 7. Religious Education: CRE/IRE/HRE 8. Social studies 9. Physical and Health Education 10. Art and Craft 11. Music 12. Indigenous Language 13. Foreign Languages: 14. French/Arabic/German/Mandarin (Chinese)/KSL

Each course has several topics/content areas organized by strand, which introduce the main theoretical content being taught, followed by a sub-strand which is a subtopic of the main topic. Next, the specific learning outcomes are stated, followed by suggested learning experiences for the teacher trainees. Lastly, key inquiry questions are stated for the topic. The section also outlines the core competencies to be developed, including pedagogical content knowledge, digital learning skills, critical thinking, and problem-solving skills and values. The section ends with a suggested formative assessment rubric. We reviewed all the curriculum designs to examine whether gender in education is taught as a standalone unit/courses/topics; the integration of gender mainstreaming issues in subjects and teaching materials; and the extent to which engendering instructional approaches are emphasized in the professional and content area courses such as aspects of lesson planning, formative assessment.

The practicum experience is a core aspect of the pre-service training as it is the means through which the trainees get opportunities to link theory and practice of facilitating learning with mentorship and support from model teachers and the TTC tutors. The curriculum stipulates that trainees engage in a minimum of two school terms of practicum sessions. The first practicum session seeks to expose preservice teachers to the teaching/learning environment, build their confidence in facilitating learning, and improve their professional and content/pedagogical skills. The second practicum builds skills in assessment, learner efforts, and achievement.

We also conducted a content analysis of curriculum guides/syllabus for the Diploma in Teacher Education that is used to train secondary school teachers. The syllabi were published in December

2007. We examined in depth the content analysis for the following subjects: Geography, History, Computer Studies, Mathematics, English, Kiswahili, Physical Education, Library and Information Studies, Christian Religious Studies, Library and Information Studies, Business Studies, Biology, Home Economics and Agriculture. The curriculum guides have a similar structure. They begin by providing in-depth discipline content area knowledge in years one and two. In year three, training focuses on pedagogical content knowledge, teacher preparation, and teaching practice.

3.8 Knowledge Assessments and Classroom Observations

At the teacher training colleges (TTCs) level, a knowledge assessment survey to gauge the knowledge levels of tutors and teacher trainees on gender inclusive pedagogical practices and classroom observations were conducted in seven institutions. A total of 166 teacher trainees and 7 tutors responded to knowledge assessment survey. In addition, a total of 7 classroom observations in these institutions. At the primary and secondary school levels, 110 classroom observations were conducted as shown in Table 4.

Table 4: Gender desegregation of knowledge assessments and classroom observation

	Sample
Quantitative	n (#F,#M)
TTC Tutors	7 (4F,3M)
TTC trainees	166 (87F,79M)
Classroom observation	
TTC	7 (4F,3M)
Basic education (Pre-primary, Primary & Secondary)	110 (30F,80M)

3.9 Quantitative Data Analysis

Data collected were cleaned to ensure consistency and were assessed for missingness and presence of outliers. The analysis tool used was the Stata version 17.0. Analysis was both descriptive and inferential. Descriptive analysis was useful in the exploration of the data as well as in responding to research questions that required descriptive analysis. Descriptive analysis outputs were presented in terms of means, frequencies, percentages/proportions, indices and ratios through graphs and tabulations. Inferential analysis was done by use of statistical tests which included tests of proportions, tests on means, reliability and validity assessments, and regression analysis. Tests of reliability and validity to check for internal consistency were done by use of the Cronbach

Alpha. Dimension reduction procedures were done by use of the Principal Component Analysis (PCA) which was used to inform the selection of the components/constructs that explained the highest proportion of variation or otherwise to assist in identifying the most important items for further analysis. After doing the PCA, the variables/items which had the lowest factor loadings were dropped and the resultant components/constructs were utilized to predict scores. The type of inferential test applied was informed by the underlying statistical assumptions. For instance, for test on means of variables that did not meet the normality assumptions usually required to carry out a t-test, the non-parametric tests such as the Wilcoxon signed-rank tests were used. Similarly, we utilized the following regression models in testing for association among variables; Generalized Estimating Equations (GEE), Generalized Linear Model (GLM) and binary logistic regression analysis. We used the Generalized Estimating Equations (GEE) model for primary school level and secondary school level, to assess the relationships between academic outcomes against gender mainstreaming compliance indices, school factors, learner attendance as well as classroom environment and pedagogical practices. To assess the relationship between the learner's school attendance and school and class factors, we utilized the Generalized Linear Models with distribution family as binomial and logit link function. Finally, the assessment of relationship between secondary school students' expected optional subject choice in Form 3 and classroom pedagogical practices among other school and learner factors were assessed by use of the binary logistic regression. We assessed these relationships for each level (i.e. primary and secondary) separately because of their different dynamics. The analysis was based on the mixed gender schools only in which classroom observations were done.

3.10 Qualitative data analysis

All the qualitative data were tape-recorded and transcribed verbatim in English into MS Word. In addition, the study team double-checked the transcriptions against audio files to ensure the validity of the transcribed data. During coding, the study team mainly generated key themes of interest deductively guided by the questions in the qualitative guides and a few themes inductively from emerging issues that came up while analyzing the transcribed data (Azungah, 2018). The emergent codes were then organized into and fed into NVivo software. The thematic analysis (Braun & Clarke, 2012) allowed the study team to collate similar views from various categories of respondents and thus deduce general perceptions of a phenomenon of interest. A coding report organizing the qualitative data into themes of interest was then generated and used to summarize key findings. Credibility and trustworthiness of the qualitative data was done through the triangulation of multiple data sets including document analysis, indepth interviews, and key informant interviews.

4. Study Characteristics

This section represents the background characteristics of the respondents who participated in the study. This includes the age, academic and professional qualifications, and gender of the learners, head teachers, and school administrators. This section also highlights the background information of the counties and schools where the study was conducted. This includes the type of schools, whether single gender, mixed gender, boarding or day schools, public or private, and the school level, whether primary or secondary. Furthermore, we highlight the year the school was established and its registration status with the Ministry of Education. The information captured also highlights the background characteristics of the representatives of the various education offices, such as the Curriculum Support Officers (CSOs) and the Quality Assurance and Standards Officers (QASO).

4.1 School and Institution Characteristics

The total sample comprised 126 primary schools (102 public and 24 private) and 124 secondary schools (104 public and 20 private); 97.1% of public primary schools were mixed-gender, whereas all private primary schools were mixed-gender. Similarly, at the secondary level, data were collected from 20.2% of single-gender boys' schools, 24.0% of single-gender girl schools, and 55.8% of mixed-gender schools. All the public primary and secondary schools received capitation grants from the government and had been established longer than private schools. See Table 5.

Table 5: School Characteristics

School level		Primary level		Secondary level	
School type		**Public**	**Private**	**Public**	**Private**
Sample		N=102	N=24	N=104	N=20
School gender	Boys only	0 (0.0%)	0 (0.0%)	21 (20.2%)	4 (20.0%)
	Girls only	3 (2.9%)	0 (0.0%)	25 (24.0%)	2 (10.0%)
	Mixed-gender	99 (97.1%)	24 (100.0%)	58 (55.8%)	14 (70.0%)
Capitation grant allocation	No	0 (0.0%)	24 (100.0%)	0 (0.0%)	20 (100.0%)
	Yes	102 (100.0%)	0 (0.0%)	104 (100.0%)	0 (0.0%)
Years since establishment (mean (SD)		36 (19)	14 (8)	17 (14)	12 (13)

Gender and Education: Evaluating Gender Mainstreaming Practices in Curriculum Implementation in Kenya

4.2 Respondent Characteristics

4.2.1 Institutional Heads

The majority of the institutional heads (head teacher/deputy) in the schools were males as indicated in Table 6. At the primary level, 75.5% of public and 84.5% of private school heads were male; 84.6% of the institutional heads were male at secondary public schools, and 90.0% were in private schools. These patterns of school leadership could be attributed to insecurity and hardship challenges in the regions, hence the Teachers Service Commission's preference   to deploy male rather than female teachers as institutional heads in these regions. The institutional head qualifications are also presented by school type. Most institutional heads in primary public and private schools had a college diploma and a bachelor's degree while most institutional heads in secondary schools had bachelor's degrees (70.2% public and 50% private schools). Most public primary school institutional heads' highest professional level of training was either a college diploma or a bachelor's degree, whereas 4.2% from private schools were untrained. All the institutional heads for public secondary schools had some form of professional training, whereas 10% of the private secondary school heads were untrained. The highest level of professional training for public secondary schools was a bachelor's degree (75.0%), and 14.4% had a master's or doctoral degree. Overall, the institutional heads had an average of 3 - 5 years of experience as a leader in the current school. The proportion was slightly smaller for teachers in private schools.

Table 6: Institutional heads respondent characteristics

School level		Primary level		Secondary level	
School type		**Public**	**Private**	**Public**	**Private**
Sample		N=102	N=24	N=104	N=20
		n(%)	n(%)	n(%)	n(%)
Respondent's age (mean(SD)		47 (8.4)	33 (5.8)	43 (9)	40 (13)
Sex	Female	25 (24.5%)	5 (20.8%)	16 (15.4%)	2 (10.0%)
	Male	77 (75.5%)	19 (79.2%)	88 (84.6%)	18 (90.0%)
Position	Head Teacher/acting	70 (68.6%)	18 (75.0%)	47 (45.2%)	15 (75.0%)
	Deputy HT	28 (27.5%)	1 (4.2%)	38 (36.5%)	4 (20.0%)

	Senior Teacher/acting	4 (3.9%)	1 (4.2%)	13 (12.5%)	0 (0.0%)
	Director/Manager	0 (0.0%)	3 (12.5%)	5 (4.8%)	1 (5.0%)
	Administrator	0 (0.0%)	1 (4.2%)	1 (1.0%)	0 (0.0%)
Years of service in current school (mean (SD)		4.4 (3.5)	4.1 (4.4)	4.2 (3)	3 (2.8)
Highest level of education completed	College Certificate	12 (11.8%)	12 (50.0%)	0 (0.0%)	1 (5.0%)
	College Diploma	44 (43.1%)	11 (45.8%)	6 (5.8%)	6 (30.0%)
	Degree (Bachelors)	44 (43.1%)	1 (4.2%)	73 (70.2%)	10 (50.0%)
	Masters/PHD	2 (2.0%)	0 (0.0%)	25 (24.0%)	3 (15.0%)
Highest level of professional teacher training completed	Untrained teacher	0 (0.0%)	1 (4.2%)	0 (0.0%)	2 (10.0%)
	College Certificate	25 (24.5%)	14 (58.3%)	1 (1.0%)	1 (5.0%)
	College Diploma	38 (37.3%)	8 (33.3%)	7 (6.7%)	6 (30.0%)
	Degree (Bachelors)	36 (35.3%)	1 (4.2%)	78 (75.0%)	11 (55.0%)
	Post Graduate Diploma	1 (1.0%)	0 (0.0%)	3 (2.9%)	0 (0.0%)
	Masters/Ph.D.	2 (2.0%)	0 (0.0%)	15 (14.4%)	0 (0.0%)

4.2.2 Learner Characteristics

Table 7 highlights the distribution of student participants by gender, school type, school category (day or boarding), and age. Most students were drawn from public, mixed-gender day schools for both the primary and secondary school levels, with an equal representation of both girls and boys. The average age of grade six students was 13 years old, and form 2 students were 16 years old. In private schools, there was a larger proportion of boys compared to girls at both the primary and secondary levels.

Table 7: Learner Characteristics

School level		Primary (G.6)		Secondary (F.2)	
School type		**Public**	**Private**	**Public**	**Private**

Gender and Education: Evaluating Gender Mainstreaming Practices in Curriculum Implementation in Kenya

Sample		N=1,859	N=444	N=1,991	N=361
Learner's sex	Boy	925 (49.8%)	237 (53.4%)	984 (49.4%)	214 (59.3%)
	Girl	934 (50.2%)	207 (46.6%)	1,007 (50.6%)	147 (40.7%)
Day scholar or a boarder	Day Scholar	1,743 (93.8%)	412 (92.8%)	1,101 (55.3%)	250 (69.3%)
	Boarder	116 (6.2%)	32 (7.2%)	890 (44.7%)	111 (30.7%)
Child's age		13.2 (1.5)	12.8 (1.6)	16.8 (1.4)	16.9 (1.5)

5. Study Findings

5.1 The Teacher Training Curriculum and Gender Mainstreaming within Basic Education in Kenya.

The first research question sought to examine how the teacher-training curriculum prepares pre-service teachers to respond to the basic education sector gender policy through gender mainstreaming in teaching and learning.

Key Findings

- The TTC pre-service trainees had some level of understanding of gender-equitable teaching and learning practices; however, there were notable gaps in knowledge among them on several aspects of gender responsive teaching practices.
- There was inadequate content on gender mainstreaming in basic education in the entire TTC curriculum.
- There was also a misalignment between the assessment and teaching of gender mainstreaming in the TTCs. The tutors assessed gender inclusive teaching during teaching practicum assessment, whereas teacher trainees are unaware that it is an assessment component as it is not explicitly taught.
- The TTCs tutors practiced gender equity in their teaching practices in the TTC classrooms.

The pre-service trainees were asked about their perceptions of gender responsive practices during teaching and learning. The knowledge, skills, and attitudes survey focused on the six areas critical to teaching and learning, including gender-responsive language use and communication e use, lesson planning, teaching practices, learning materials as well as classroom setup and environment. The responses to the knowledge survey assessments were rated on a five-point Likert scale: 1 = strongly disagree, 2 = disagree, 3 = undecided, 4 = agree, and 5 = strongly agree.

a. Gender Responsive language use and communication

An examination of the Likert scale responses indicated that the teacher trainees seemed to understand the importance of gender-responsive language use during teaching and learning (Figure 3). There was 90% agreement that gender response language is demonstrated in practices such as allowing adequate wait time before calling on students to respond, avoiding the use of definite pronouns, therefore, recasting sentences in passive, maintaining eye contact with all students, and allowing male and female students to speak without interruption, among others.

Gender and Education: Evaluating Gender Mainstreaming Practices in Curriculum Implementation in Kenya
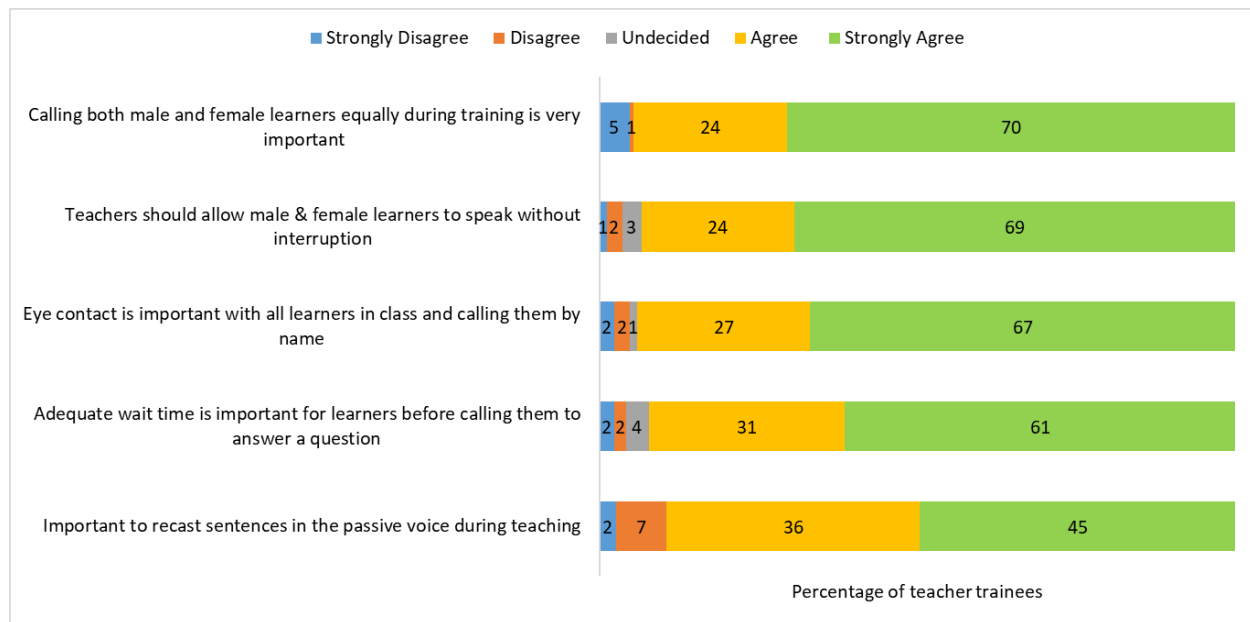
Figure 3: Gender-responsive language use and communication

b. Gender-responsive classroom set up and environment

The teacher trainees exhibited adequate understanding of some indicators of a gender-responsive classroom setup and environment, see Figure 4. For instance, there was general agreement that teachers should mix up male and female learners in the classroom; have clear class rules and routines, present themselves professionally, and enforce classroom safety. However, the trainees demonstrated a limited understanding of how sitting arrangement influences class participation. Only 73% agreed that the sitting arrangement in class should encourage quiet learners to overcome shyness and participate in learning. 52% of the teacher trainees believed that the sitting arrangement does not influence a learner's classroom participation.

Gender and Education: Evaluating Gender Mainstreaming Practices in Curriculum Implementation in Kenya
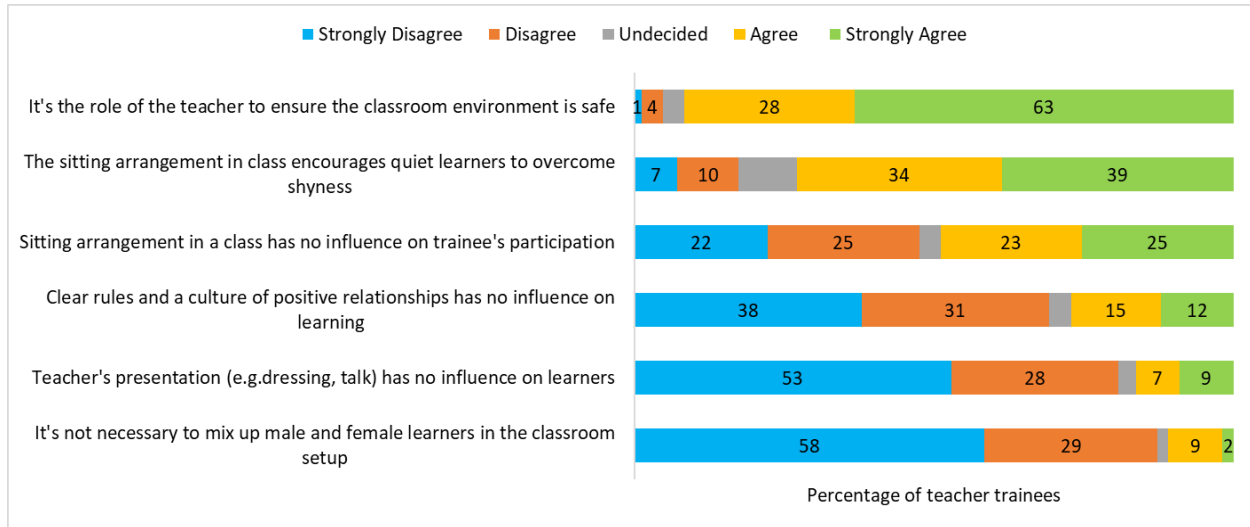
Figure 4: Gender-responsive classroom setup and environment

c. Gender-responsive planning

There was general agreement that instructional practices should cater for the needs of learners with special needs and ensure equal participation (see Figure 5). However, discrepancies were observed in the aspect of teachers' consideration of the learning needs of male and female learners during lesson planning. Indeed, 31% of the teacher trainees agreed that teachers should disregard the differences in the learning needs of male and female learners during lesson planning.
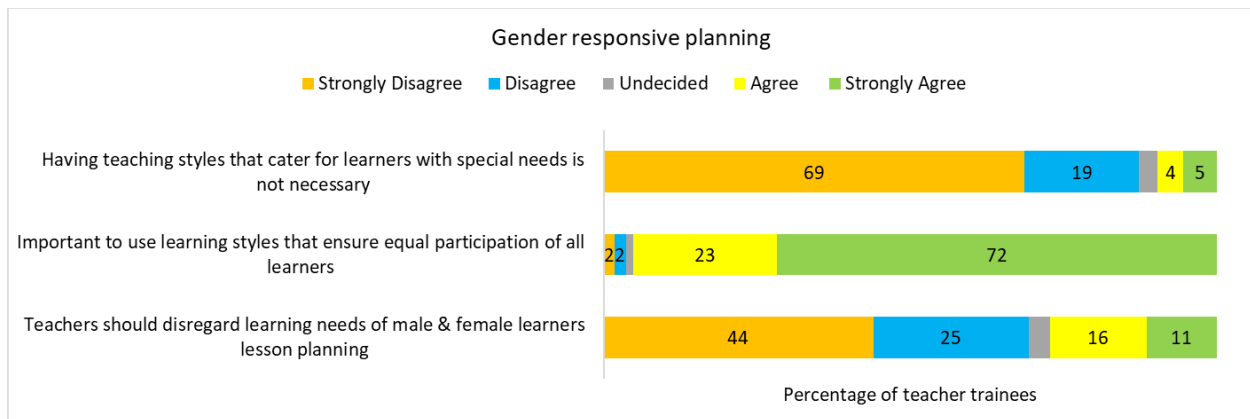
Figure 5: Gender-responsive planning

d. Gender Equitable Teaching Practices

The teacher trainee's responses on gender equitable teaching practices are displayed in Figure 6. Results indicated that the teacher trainees had a relatively adequate understanding of the importance of gender-equitable teaching practices. The majority of the teacher trainees agreed that during instruction, allocation of leadership roles, constructive feedback, and positive reinforcement should be extended equally to both genders. During practical experiments, most

teacher trainees agreed that neither gender should dominate the execution of the experiments, and that both male and female learners should be encouraged to answer questions. This notwithstanding, there were gaps in the gender equitable practices: 46% of the trainees agreed that female students require more support and assistance in STEM. The possible explanation for this perception is that boys and men do well in STEM; therefore, they may not require additional support and assistance in learning STEM areas. Fifteen percent of the teacher trainees agreed that female students are best placed to record notes during group discussions, while male students are best placed to present the findings from the presentations.

Figure 6: Gender equitable teaching practices

Gender and Education: Evaluating Gender Mainstreaming Practices in Curriculum Implementation in Kenya
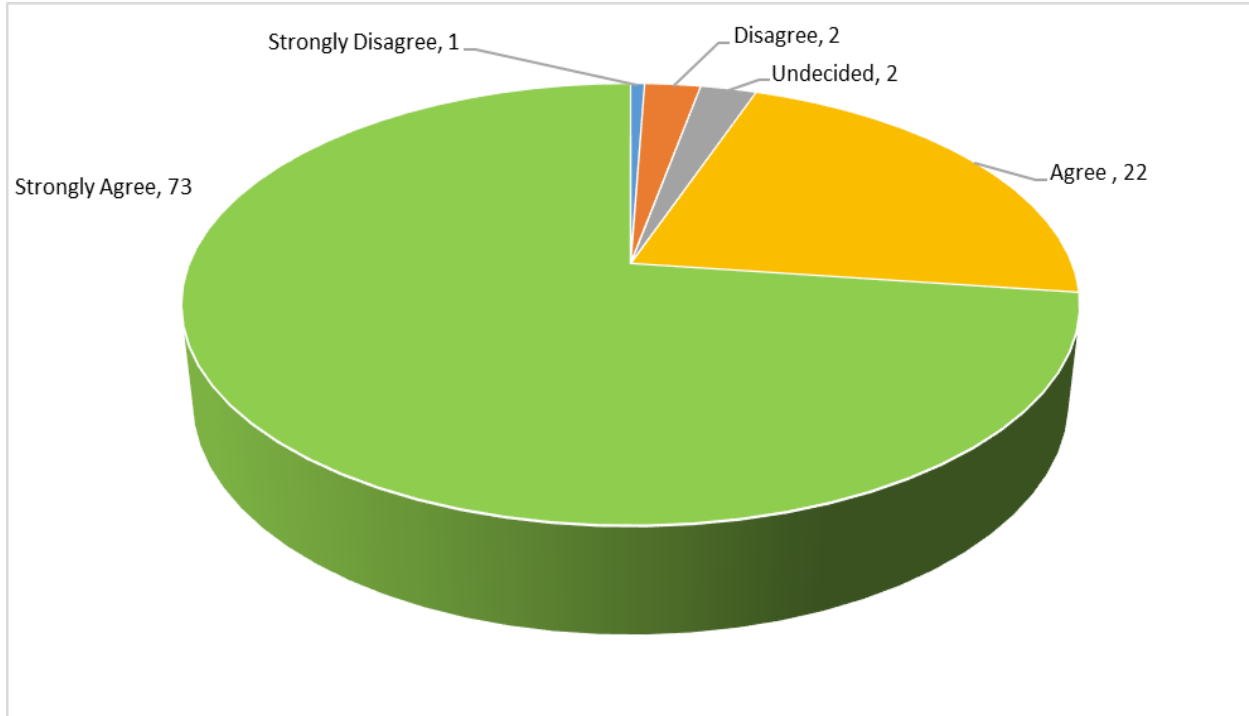
Figure 7: Gender-responsive teaching and learning practice

5.1.1 Teacher Training Colleges Classroom Observations

The tallies on the number of times male and female student teachers were engaged was summarized using the mean of tallies for all observation instances by considering all tally items per sub-theme, i.e., *gender-responsive language use and participation* and *gender-equitable classroom interactions*. A test on whether the number of tallies were similar across student teachers' sex was done using Wilcoxon signed-rank test. Results revealed that there was no significant difference in the number of engagements for male versus female students. See Table 8.

Table 8: A test on the mean of tallies of male versus female teacher trainees were engagement during instruction

	#obs instances	z statistic	Prob > |z|
Gender responsive language use and participation	69	-0.74	0.459
Gender equitable classroom interactions	69	-0.95	0.345

Gender and Education: Evaluating Gender Mainstreaming Practices in Curriculum Implementation in Kenya

a. Gender Equitable Classroom Interactions

Tutors in TTCs encouraged gender-equitable classroom interactions with pre-service teachers, as indicated in Figure 8. They also encouraged interactions among male and female teacher trainees. 75% of the tutors related the classroom work with everyday life scenarios using a gender lens. The tutors encouraged the trainees to interact with the specimen, facilitated group discussions taking into account the gender lens, and ensured the groups had equal representation of both male and female trainees where applicable. Ninety six percent of the tutors observed gave the teacher trainees ample time to respond to both oral and written questions.
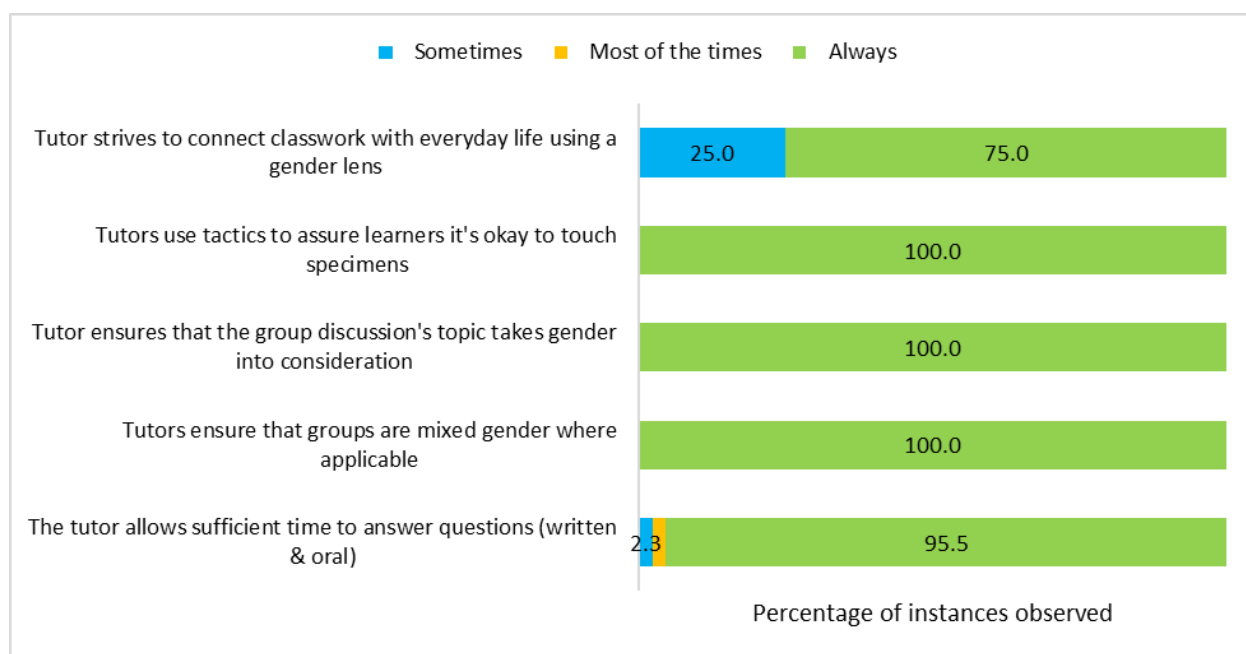
Figure 8: Gender equitable classroom interactions

b. Gender Responsive Classroom Setup and Environment

Results indicated that tutors utilized a gender-inclusive classroom setup and environment. For instance, all tutors were observed to either always or most of the time use fair corrective measures for both male and female teacher trainees. However, 26% of tutors rarely or sometimes presented themselves professionally during the observations. See Figure 9.
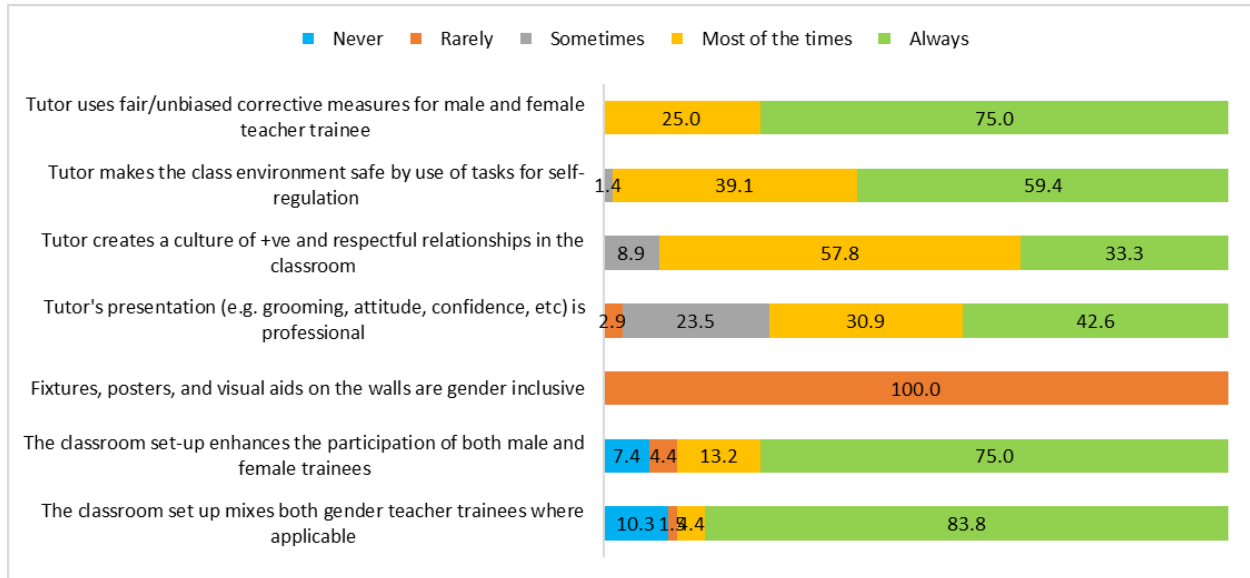
Figure 9: Gender-responsive classroom setup and environment

5.1.2 Gender Mainstreaming in the Teacher Education Curriculum Designs

The next section presents the findings of the content analysis of the teacher education curriculum designs. In the Diploma Teachers Training Curricula, gender in education/gender issues is neither taught as a stand-alone unit nor as a topic within the pre-service teacher training curriculum which is centered on the Competence-Based Curriculum (CBC). The term "gender" or "gender responsive teaching practices" does not appear in the early childhood, primary, and secondary TTC curriculum designs.

The learning outcomes across the content and pedagogical content curriculum designs only relate to the subject matter. The curriculum designs outline the pedagogical content knowledge teacher trainees should acquire, along with instructional strategies, learning resources, suggested learning experiences, and strategies to create relevant learning experiences. The training guides do not capture the importance of intentionally supporting the different learning needs of male and female learners or the use of gender responsive pedagogy. Because the curriculum designs do not enhance or promote gender mainstreaming, the core competencies and values emphasized do not highlight gender inclusivity as an outcome. Each topic in the curriculum designs has a section on suggested formative assessments, which describes the indicators and provides descriptions of the assessment rubrics. A review of the formative assessment rubrics indicated that gender was not a focus area in the assessments, even though indicators of mainstreaming could be included in the indicator of trainees creating learning experiences for learning various subject matter content.

A review of the micro-teaching curriculum design indicates notable gaps as gender responsive practices/pedagogy is not explicitly targeted in this design, yet it should be a core component of pre-service training. In the section on micro-teaching skills, some of the targeted learning outcomes could encompass engendered practices; however, the outcome and the suggested

learning experiences are not engendered. A few examples of the target learning outcomes and the teaching and learning experiences are highlighted below.

On the learning experiences sub-strand on DPTE p.8. A review of the specific learning outcomes and the learning experiences highlights gaps in gender mainstreaming.

The specific learning outcomes state that the trainee should be able to:

- *Identify the characteristics of the learning experiences in the learning process*
- *Discuss factors to consider when selecting learning experiences in preparation for facilitating learning experiences.*
- *Relate suggested learning experiences to learning outcomes in learning areas*
- *Generate learning experiences for a particular learning area.*

The corresponding learning experiences for teacher trainees are as follows:

- *Create learning experiences and link them to the learning outcomes*
- *Display the work in the plenary and lead participants to comment on the learning experiences*
- *Model how to link specific learning outcomes in the sub-strand to a value, PCI and community service activity*
- *Generate different learning experiences for the attainment of identified learning outcomes.*

For example, on the substrand of micro-teaching skills, one of the outcomes is that the teacher trainee should be able to compile skills required by a teacher in micro-teaching and apply the acquired skills in a micro-teaching lesson. While the overall target outcome is well stated, the suggested learning experiences do not reflect gender as a critical indicator as shown in DPTE Micro-teaching Curriculum Design p. 13

- *Watch a video in a learning area and identify the skills exhibited.*
- *Develop a list of skills required by the teacher in the teaching and learning process*
- *Prepare a lesson, incorporate creative thinking skills, and present it to peers.*

Similar gaps are noted in the Motivation/Stimulus Variation section DPTE MicroTeaching Curriculum design p. 17. Some of the expected outcomes include but are not limited to analyzing the importance of reinforcing learners' behavior, identifying skills that make learning more interesting, and applying those skills in a micro-teaching classroom situation. The suggested learning experiences do not have gender as a focus, even though they could be incorporated. Some examples of suggested learning experiences are as follows:

- *Observe a lesson presented by peers and report whether there was positive reinforcement through cues and prompts like; nodding, smile, positive reinforcement*

- *Prepare a lesson that has stimulus variation such as varying the voice, use of videos, photos, pictures, and then present the lesson to their peers*
- *Prepare a micro lesson then present to their peers*
- *Identify skills demonstrated in the lesson.*

The practicum experience is a key component of teacher training as this is the opportunity for students to practice the linkage between theory and practice. The curriculum has a section on lesson demonstration and reflection with the specific learning objectives (DPTE p 21), namely:

- *Examine the importance of lesson demonstration in learning*
- *Observe and critique video clips of lessons demonstrated by resource persons*
- *Analyze components of micro-lesson for skills improvement*
- *Discuss the concept of micro-lessons of reflective teaching as used in the learning process*
- *Analyze the role of the teacher in reflective teaching*
- *Take part in micro-teaching to enhance instructional skills*

The suggested learning experiences are as follows:

- *In groups evaluate the importance of lesson demonstration and present findings to peers*
- *Visit a nearby school and record video of a teacher presenting a lesson in class*
- *View the video clips on the demonstrated lesson and give feedback on areas of strength and improvement*
- *Present micro-teaching lessons, peer critique and give feedback*

There are notable gaps as the classroom management sections on the curriculum do not focus on gender inclusive practices.

In the section on classroom management, the teacher trainees should be able to:

- *formulate effective class control measures to enhance learning*
- * Desire to enhance positive discipline in the learning environment*

Through engaging in learning experiences such as:

- *Outlining effective class control measures*
- *Discuss how learners can engage all learners in the learning process so as to promote positive class discipline.*

Another important focus area of the curriculum is inclusive education. Inclusive education practices seek to ensure that the needs of diverse learners are catered for in learning regardless of gender, disability, ethnic, social, economic, or cultural background. The training, therefore, seeks to equip the teacher trainees with a general understanding of inclusive education, knowledge, skills, values, and attitudes to support diverse learners in an inclusive learning environment.

Gender and Education: Evaluating Gender Mainstreaming Practices in Curriculum Implementation in Kenya

Gender mainstreaming is an indicator of inclusivity as it purports to support the needs of diverse students, however, it is important that the focus on male and female learners should be stated explicitly in the curriculum materials. These intentional strategies help to sensitize teachers and break the unconscious biases that they bring from their cultures and experiences. An in-depth review of the inclusive education design shows gaps in several areas where gender mainstreaming could be a key target to promoting inclusive education. For instance, the objectives aim to meet diverse learners' needs, and gender is not an indicator.

DPTE Inclusive Education p.4. The specific learning outcomes for principles of inclusive education state that at the end of the substrand.

- *Apply the principles of inclusive education to meet the needs of diverse learners*
- *Embrace the principles of inclusive education in planning and implementing instruction.*

The suggested learning experiences for these outcomes include:

- *Design flexible learning experiences*
- *Represent diversity in the curriculum*
- *Scaffold underpinning knowledge and skills*
- *Building a community of learners.*
- *Assess equitably*
- *Feedback effectively*
- *Model the application of the principles of inclusive education to meet the diverse needs of learners.*

The curriculum guide highlights the identification, support services, and teaching intervention strategies, designing and implementing action plans geared towards enhancing learning among learners from diverse backgrounds, such as the gifted and talented learners, learners living under difficult circumstances, i.e., orphans, homeless, abandoned, street, refugees, working children, children affected by wars, natural disasters, HIV and AIDS, children from affluent families, learners with disabilities -visual/hearing/physical impairment, learners with intellectual disability, learners with autism, deaf and blind, learners with cerebral palsy, learners with learning disabilities among others. While it is important that all the vulnerable groups are acknowledged for targeted support, it is also critical to take gender differences into consideration as different genders are affected differently. The curriculum focus on equipping trainees with skill sets to support diverse and marginalized learners is an important step towards inclusive education. However, it is critical that gender lens should focus on inclusive education so that trainees are sensitized to the needs, differences, and effective intervention strategies for diverse and marginalized male and female students. There is a gap and limitation in the curriculum guide as there is no single mention of gender and gender-inclusive practices to support the needs of diverse groups of students.

Gender and Education: Evaluating Gender Mainstreaming Practices in Curriculum Implementation in Kenya

The section on curriculum differentiation emphasizes that differentiating the curriculum to meet the needs of individual learners is a core component of inclusive education. However, the specific learning outcomes in this section are general and geared towards meeting the needs of diverse learners in an inclusive setting and do not discriminate based on the gender of learners. Some examples of specific learning outcomes under curriculum differentiation are as follows in DPTE Inclusive Education p.60:

- *Evaluate ways in which the curriculum can be modified to suit diverse learners in an inclusive setting*
- *Examine learning strategies that suit diverse learners in an inclusive setting*
- *Design learning resources in an inclusive setting*
- *Model a differentiated lesson to cater for diverse learners in the learning process*

The suggested learning experiences also exclude gender inclusivity as an important aspect of the learning experiences. See examples of the suggested learning experiences.

- *Brainstorm, search online, and discuss ways in which curriculum can be modified to suit diverse learners in an inclusive setting and make presentations*
- *Discuss areas of difficulties where learners would require an individualized education plan and make notes.*
- *Write an individualized plan for learners with specific needs and conduct a peer review.*
- *Appreciate curriculum differentiation as a component of inclusive education.*
- *Brainstorm and search the learning strategies that suit diverse learners in an inclusive setting online.*

The last section in the Inclusive Education curriculum guide focuses on social, economic, and cultural barriers that affect inclusivity in learning. This is an important aspect that the curriculum focuses on, as there are cultural factors within communities, which present barriers to learning and access to education differently for male and female students. DPTE Inclusive Education p.66

- *Evaluate the social, economic, and cultural barriers that may impede effective inclusion of learners*
- *Explore ways of alleviating social, economic, and cultural barriers in a learning setting to support inclusion*
- *Appreciate the need to alleviate social, economic, and cultural barriers that may impede the participation of all learners in the learning process*

The suggested learning experiences for these learning outcomes include

- *Brainstorm and search online on the social economic and cultural barriers that may impede effective inclusion of learners in a learning setting. Trainees to focus on gender, ethnicity, poverty, and cultural practices*

Gender and Education: Evaluating Gender Mainstreaming Practices in Curriculum Implementation in Kenya

- *Discuss ways of alleviating social, economic, and cultural barriers in a learning setting support inclusion of all learners and make notes*
- *Write a term paper on social, economic, and cultural barriers to inclusive education.*

A review of the curriculum guides for the Diploma in Secondary Teacher Education indicated that the curriculum emphasized the specific discipline content knowledge. The teacher education curriculum designs reviewed presented a list of all topics covered in specific subject areas such as Agriculture, Christian Religious Education, Biology, Mathematics, among others. The syllabus also includes sections on teaching methods, teaching practice, suggested teaching and learning activities, resources, and assessment methods. These sections on teaching pedagogy are critical for equipping teachers with pedagogical content knowledge and gender-inclusive teaching and learning practices. However, there are noticeable gaps in the pedagogical aspects of the curriculum as gender is not a focus on the pedagogical aspects. Here are a few examples of the content covered in several subjects

Diploma Teacher Education Business Studies

Specific objectives for teaching methods. By the of the topic, the learners should be able to

- *Explain the meaning of teaching methods*
- *Various teaching methods*
- *Advantages and disadvantages of each method*
- *Identify relevant teaching methods for various topics*

On teaching and learning resources. By the end of the topic, the learner should be able to:

- *Explain the meaning and importance of teaching and learning resources*
- *Identify and describe the various teaching resources available in the locality which can be used in teaching*
- *Explain the factors which influence the choice of an appropriate teaching/learning resources*
- *Prepare teaching and learning resources.*

On lesson plan and lesson notes. By the end of the topic, the learners should be able to:

- *Explain the meaning and importance of a lesson plan*
- *Prepare a lesson plan*
- *Prepare lesson notes*

On assessment and evaluation. By the end of the topic, the learners should be able to:

- *Explain the meaning and importance of assessment and evaluation*
- *Explain the types of assessments*

- *Discuss the development of test items*
- *Administer the test*

On micro-teaching and peer teaching. The learner should be able to:

- *Explain the meaning and importance of micro and peer teaching*
- *Prepare and present micro and peer teaching lessons*

Another example of a set of objectives of teacher preparation in Biology are as follows: Diploma Teacher Education Biology p. 40.

- *Explain the roles of biology head of Department and Biology subject teacher*
- *Define the term syllabus*
- *Explain principles used in designing a good syllabus*
- *Explain the need for a scheme of work and a lesson plan*
- *Design and use a scheme of work and a lesson plan*
- *State the need for keeping records*
- *Assess and evaluate pupil performance*
- *State ways of carrying out self-evaluation*
- *Explain the importance of in-service training programs.*

Similar gaps are noted in the methodology for teaching Mathematics. The objectives indicate that by the end of the training, the learners should be able to

- *Identify the secondary school mathematics syllabus components*
- *Relate specific objectives to the subject content*
- *Identify the relationship among syllabus components*
- *Prepare schemes of work lesson plans, and teaching aids*
- *Keep records such as progress records of work.*

The specific objectives for teaching skills in Mathematics are as follows

- *Identify and describe the methods of teaching secondary school mathematics*
- *Acquire and apply appropriate teaching skills in peer and micro-teaching (emphasis in on learner-centered methods)*
- *Describe and use deductive and heuristic approaches to teaching and learning*

Across all the Diploma Teacher Education curriculum guides, gender-inclusive teaching and learning practices are not included as a focus of the training particularly in syllabus design, teaching methods, lesson planning, setting up and conducting practicals or experiments, assessment, and evaluation of learners. This is an indication that the preservice institutions do not adequately prepare trainees to mainstream gender issues in teaching and learning.

Gender and Education: Evaluating Gender Mainstreaming Practices in Curriculum Implementation in Kenya

Whereas the content analysis of the teacher training curriculum designs and views by pre-service tutors and teacher trainees suggested that gender mainstreaming was not deliberately covered in the teacher training curriculum, one of the key informants from KICD held a contrary opinion. According to them, gender issues were integrated into the new CBC curriculum in various dimensions. In particular, they pointed to the fact that there was a shift from the 8-4-4 curriculum, where gender issues were cross-cutting, to being integrated into the new curriculum as one of the Pertinent and Contemporary Issues (PCI). They also highlighted that teachers are trained on integrating gender issues when interpreting the curriculum designs and being aware of how gender issues play out when implementing various educational activities such as sports, guidance, and counseling.

> *R:…So we have been identifying appropriate opportunities in the curriculum to integrate aspects of gender, gender issues, and that has continued even in the ongoing curriculum reform process…KII, KICD officer*

> *… and we will tell the teachers how to interpret the design, how to use the learning materials, and when they are dealing with sports or learner support programs like guidance and counseling or mentorship, consider issues of you must be gender sensitive…KII, KICD officer*

5.1.3 Assessments

Gender responsive pedagogy or gender inclusivity in teaching and learning is not targeted in assessment. The assessments administered typically focus on assessing content areas. Gender aspects are not assessed because they are not a focus area of training.

Below are a few examples of questions from a Mathematics paper 3 assessment.

- *State the characteristics of a mathematics instructional objective.*
- *Define the term lesson plan.*
- *Describe the four main stages or steps in a mathematics lesson presentation.*
- *List five components of a mathematics syllabus.*
- *State three reasons why a mathematics teacher should plan for the lesson in advance.*
- *Explain the factors to be considered when designing a quality mathematics scheme of work.*
- *Outline four features of good instruction in mathematics.*
- *Prepare a 40-minute lesson plan to teach a form class the subtopic and place values of natural numbers.*

Gender and Education: Evaluating Gender Mainstreaming Practices in Curriculum Implementation in Kenya

5.1.4. Gender mainstreaming in the DECTE

A review of the DECTE curriculum indicated that gender issues were not taught as stand-alone areas but rather there is a mention of gender in certain learning areas. Sample examples are captured below under the different subject areas

- In Mathematics, under the basic statistics sub-strand, the teacher is expected to… *Collect group biographical data of teachers trainees in the class such as gender, age, etc (Pg 7).* This learning experience seeks to give the teacher trainees the ability to practice to illustrate types of data available in a school environment. The focus is not the use of the disaggregated data available in the school to enhance instructional practices or to attend to the different educational needs of boys and girls.
- Under the measurement strand, the sub-strand on length of objects one of the specific learning outcomes *is integrate gender issues in teaching and learning in length in real life situations*), the suggested learning experience for this learning outcome was the *Use of gender-related examples to illustrate measurement in length (P.52)*
- In English, suggested learning experiences under language learning and development in children *includes gender as one of the factors that affect language development in children (p 32)*
- Under child development and psychology, gender issues affecting child growth and development are included as an indicator in the assessment rubrics *(P15)*

Gender mainstreaming could have been considered under different subjects and strands. For instance, in strands such as matching and pairing *(Mathematics), gender-related components could have been used in pairing according to different physical attributes (that is boys and girls) and this could have been linked to real-life scenarios.* Under educational leadership and management, there is mention of teaching the trainees on SDG 4 on quality education. However, no mention is made of SDG 5 on gender equality and how this relates to education. The curriculum designs encourage participatory classroom learning activities such as group work, role plays, etc. This could have been a good avenue to introduce different elements of gender mainstreaming.

Discussions with respondents from KICD and the Ministry revealed as a strategy to support teachers to enrich the learning experience whilst enhancing gender mainstreaming, KICD developed support materials for teachers as a guide, and these have incorporated gender issues. In addition, as evaluators of the course books, KICD ensures the publishers incorporate gender issues into the learning materials.

> R:…*So we make sure that we encourage publishers to make sure that PCIs are well integrated in the learners' books and in the teachers' guides so that the teacher will now have the design and materials that are aligned to the designs…KII, KICD officer*

Gender and Education: Evaluating Gender Mainstreaming Practices in Curriculum Implementation in Kenya

5.1.5 Understanding of gender mainstreaming in basic education

This section highlights the qualitative narratives from the pre-service, and inservice teacher, TTC tutors and education stakeholders on their understanding of gender mainstreaming in basic education. Pre-service teachers indicated that their understanding of the gender mainstreaming construct meant providing equal opportunities to both male and female students to access education, participate in classroom and school activities, distribute leadership positions, and distribute learning resources. They went further to echo that gender mainstreaming in teacher training meant that both male and female teacher trainees had access to the same courses and teacher training opportunities.

> *R1: I believe gender mainstreaming is involving male and female students in a school setup where they all acquire the same skills, and they are all given the same opportunities to maybe show what they have or participate fully with no gender bias. Where they are all allowed to do the same things...FGD, Pre-service teachers, Lugari TTC*

> *R2: What I can say I think it means including every learner or each learner, be it a gentleman or a female. They can either be handicapped or normal, to include them in inclusive places...FGD, Pre-service teachers, Garissa TTC*

> *R2: from the word mainstreaming and from the word gender; it is the provision of an equal opportunity, especially when it comes to education so that we can have male and female having equal opportunities in accessing this education and especially when dealing with teacher training and more so those people who have been given the opportunity to undergo DPTE (Diploma in Primary Teacher Education). FGD, Pre-service teachers, Machakos TTC*

Some of the teacher trainees also viewed gender mainstreaming from a progressive lens, highlighting that it also meant getting rid of traditions such as payment of bride price, which stop girls from getting an education since parents view them as commodities to be exchanged for wealth, and thus parents do not invest in their education.

> *R2: As for me, I think it is to at least get away from the society's beliefs and customs that may hinder one gender from the other, like, for example, let's say the girls have been seeing they are just there as the property of the family like they are the ones going to be sold out so that they can bring cows and whatsoever so the education is not much wasted in them, not invested in them, unlike boys. Yes, I think that...FGD, Pre-service teachers, Thogoto TTC*

On the other hand, discussions with pre-service tutors indicated that they also understood the term gender mainstreaming in education - from the equality perspective. They, however, tended to focus more on the levels of teacher training. For instance, pre-service tutors mentioned that gender

mainstreaming refers to: equal enrollment of male and female teacher trainees in teacher training institutions; providing equal learning opportunities to both male and female teacher trainees; giving the same opportunities to acquire knowledge acquires skills, and attitudes, as well as ensuring that their own teaching practices are gender inclusive such as using gender-sensitive examples.

> *I think gender mainstreaming basically means taking care of both genders without partiality and showing equality to both genders because, basically, we get male and female students. And in gender mainstreaming, we are supposed to care for them equally without favoring one or the other…IDI, Pre-service tutor, Kagumo TTC*

> *Gender mainstreaming is having to balance the genders to give the same opportunities so that they end up acquiring the same knowledge, skills, and attitudes so that finally they are at par. Without any of the gender being disadvantaged…IDI, Pre-service tutor, Machakos TTC*

> *Okay, based on my experience as I teach, I take gender mainstreaming as putting issues of gender as I plan my work, as we place our students in classes, as you know, as we teach the topics that we are teaching, we call them strands, so in each and every topic you try and see where you can fix in gender issues so that the learners are also aware and as a teacher, you are also aware of gender issues…IDI, Pre-service tutor, Shanzu TTC*

In-service teachers also depicted a relatively adequate understanding of gender mainstreaming. In their descriptions, the in-service teachers extrapolated seven ways of gender mainstreaming. These included: equal opportunities for boys and girls to access quality education; eradicating gender stereotypes that girls do not perform well in STEM subjects; equal representation for female and male students in leadership positions; use of gender-inclusive teaching practices; equal opportunities in asking and answering questions; equal distribution of responsibilities and equal opportunities for both girls and boys as regards taking up leadership positions in the school. In-service teachers also went further to touch on policies as well as support for special interest groups of students. For instance, they reiterated that gender mainstreaming was meant providing equal support to students with special needs or those that have experienced early marriage and sexual harassment as well as integrating gender in the preparation and evaluation of policies to ensure gender equality and hamper gender discrimination.

> *The education sector provides equal opportunities to both boys and girls in the education sector so that boys and girls get equal opportunity access to quality education so that neither girl child nor boy is segregated or sidelined in terms of education, and that's why we say gender mainstreaming … people sometimes look down upon a girl, they are not performing, they are not able to do certain subjects for example sciences, mathematics but in normal cases, like now you find that girls are performing, even more, better than the boy*

child, so that how we talk of stereotypes are not there as at now, though in minimal cases…IDI, In-service teacher, Primary school, Busia

According to me, when you talk of gender mainstreaming, you are referring to the issue of inculcating or integrating or involving gender perspectives in the preparation and in evaluation of policies so that you uphold gender equality, and you try to subvert or combat gender discrimination…IDI, In-service teacher, Secondary school, Garissa

…because you have both boys and girls in that class, so the first thing that you need to look or check about is this gender sensitivity. For example, if you are teaching science, you know these learners have different abilities and different ways of understanding. So, you have to ensure that when you are in class, you make sure that every child at least has gotten the concept or understood it. And in case you see maybe there is a child who is struggling a bit, then you have to at least make sure or create some time to ensure that that child you have straightened her/him until she/he has gotten into the same level with those other ones…IDI, In-service teacher, Primary school, Mandera

Gender mainstreaming depends on… my understanding is the number of female teachers who have been employed in the teaching profession and enrolment of girls in the school… both boys and girls. Maybe the involvement of girls when it comes to science subjects, how do we involve them in maybe some assignments that we give? There are also extra curriculum activities.Do we engage more boys than girls in the extra curriculum activities? Then we have when we are teaching may be the assessment of boys and girls, the type of questions that we ask girls and boys do they give that equality? IDI, In-service teacher, Secondary school, Marsabit

Further, discussions with key informants from the Ministry of Education and the Kenya Institute of Curriculum Development revealed that they had an adequate understanding of gender mainstreaming. They noted that gender mainstreaming encompasses giving equal opportunities to both boys and girls to interact with the learning process and also providing a curriculum that is responsive to the needs of both genders.

R 3: We look at gender mainstreaming in education as an aspect of wanting to create awareness about boy-female, boy-girl, and the unique issues that affect each of these two genders and with a view to actually wanting to be gender-sensitive, to creating a gender-sensitive environment where the boys or the men and the girls and the boys will feel comfortable and not feel discriminated or treated unfairly because of their gender…KII, KICD officer

Gender and Education: Evaluating Gender Mainstreaming Practices in Curriculum Implementation in Kenya

5.1.6 Source of gender mainstreaming knowledge

When asked where they had gained the knowledge on gender mainstreaming, teacher trainees, tutors, and in-service teachers explained that although the concept was not taught as a standalone unit, gender mainstreaming was covered in units such as the psychology of education and inclusive education. Through these units, teacher trainees were imparted with knowledge on how to be sensitive to the needs of both male and female students.

> *R3: I think we are being prepared for gender mainstreaming in this curriculum. The reason I say that is because some units enable us to understand how to handle both genders while teaching in school. Like there are lessons done in the psychology of education that deals with the growth and development of humans. In that unit, we learn about both males and females, so I think from that, we are prepared for gender mainstreaming…FGD, Teacher trainees, Lugari*

> *To my understanding… anyway in the university, the university curriculum, the issues of gender have not been captured in the courses and units directly as he has said, but it has been captured under the topic of psychology, developmental psychology of students I think that is the only area I would say gender has been covered where you understand the psychology of students of both genders you identify their problems and how to tackle them…IDI, In–service teacher Marsabit*

Some teacher trainees, particularly in Garissa, reiterated that they had been taught how to be gender inclusive in their teaching. Some of the gender-inclusive strategies they mentioned implementing in their classrooms were including students in class activities like group discussions, answering questions, and presentations. *R1: Yes, because in inclusive education, we are taught that we are supposed to treat all learners equally, either male or female, and in a set of classrooms, you are supposed to treat them either male or female by putting them in group discussions and presentations. You are not supposed to be biased against one gender over the other. You are supposed to treat them equally in terms of group discussions, presentations, and in terms of assessments in learning...FGD, Teacher trainees, Garissa*

> *R4: Yes, because in inclusive, we are being prepared to bring the learners from different diversities, that is, boys, girls, those who have intellectual problems, those who can't talk, together and come out with strategies as a teacher on how to make these learners understand through group discussion, just asking learners questions in pairs and working as a team in class…FGD, Teacher trainees, Garissa*

The study respondents (pre-service teachers) also pointed out that they gained knowledge on gender inclusion from sensitization by external institutions such as Non-Governmental Organizations (NGOs). Although the knowledge gained was not necessarily on teaching practices, they were able to apply some of the aspects as teachers.

R: Well that time it was not so much by then, but due to the induction courses that I have undergone, there are a number of courses I have undergone, especially on the side of the girl child, which were sponsored by certain organizations, especially the World Vision around here, which normally talks about the girl child and then the boy child, how to empower girl child so as to avoid gender biases among the boys and girls…In-service primary teacher Busia

R: In our own teaching, I can say most of us are because I can say that at present we are very much aware of gender because there is a program that is going on which is being brought to us by the Aga Khan Academy and part of the course that they are taking us through in the workshops is about gender responsiveness. So we've been going through gender responsiveness a lot. We were even told to have a work plan to show how we are going to infuse gender within the work that we will be doing, like within our lessons, and also how we can also infuse it within our lesson plans, our schemes, and all that…IDI, Pre-service tutor, Shanzu TTC

R: Some of these activities are conducted by education partners, especially the Non-Governmental Organizations and other education partners. We've had several trainings of these organizations here, but you see is just a sensitization…KII, QASO, Tana River

5.1.7 Assessment of gender mainstreaming during teaching practice/practicum

Discussions with the pre-service tutors revealed that teacher trainees were assessed on gender mainstreaming aspects during their teaching practice or practicum, usually at the end of the third year. Some of the aspects include gender inclusivity in asking questions and in providing feedback to the students. The evaluation of gender mainstreaming was also done at the classroom level, where the teacher trainees were required to practice among themselves (micro-teaching). In addition, the training institutions also made an effort to ensure a gender balance of teacher trainees when distributing them to various schools during their practicums.

R: Teaching practice. We call it practicum nowadays. As they go for practicum, they are, yes, we have within the tool that we use to assess them during the practicum. There is one aspect of gender because we look at whether the student was gender biased as they were asking questions. Were they asking only females, or they were asking both, and even as they were teaching, were they maybe appreciating only females or appreciating both [emphasis added]? So we have it within our tool that we use to assess them as they go for practicum. And then mostly you find that when we send them for practicum where we place them at times they are two in a class, and we always try to put a male and a female so unless as I have told you, we have few males, so unless now we have placed them and the males we have already placed all of them that now they will be female and female but the first ones that we always do, we always put them like male and female in a class so that

they get to help each other. You know, there are things that the lady maybe will be very good at, and the male will be good at, so they help themselves…IDI, Pre-service tutor, Shanzu TTC

R: Yes, they are being taught because before they go out for the practicum, we have what we call micro-teaching. So this micro-teaching is where they teach each other within the class. So when you come to a class micro-teaching, you find that one of the students will be preparing a lesson, writing a lesson plan, preparing the schemes of work, and then teaching their fellow students. So within that also, we always gear them at seeing that they are not gender biased in a way they have to treat all students the same. So we also look at that aspect, and they are also trained on doing that…IDI, Pre-service tutor, Shanzu TTC

It also came out that most teacher trainees – from all the seven institutions – were not aware that they were assessed on gender mainstreaming. According to them, the assessments were more focused on content delivery and not gender-inclusive teaching practices. There were, however, some aspects of inclusivity that were assessed in the 'Inclusive Education' course, such as how to handle students with a disability or those that have undergone challenges such as female genital mutilation (FGM), and not how to handle male and female students in a classroom.

R6: Inclusive education aims at you as a teacher creating a conducive environment for all the learners irrespective of their difficulties or disabilities. So we have learners who come from poor backgrounds and have run away from their homes because, let's say, they were running away from FGM. So you must create an environment for them so that they feel comfortable whenever they are in class. So you are not supposed to discriminate against them, society has also discriminated against them. You need to bring them on board so that they can learn easily, just like any other student…FGD, Pre-service teachers, Thogoto TTC

R5: On the aspect of inclusivity, maybe we focus on learners in the class, both the regular and the ones with a disability. In that inclusive subject, you mostly find the type of questions that are being asked; maybe what are some of the strategies you as a teacher are going to use so that you make sure the regular learner and the one with disabilities will be on the same level and not only the strategies but even what kind of resources. Maybe you have one in class, maybe he is partially blind, and the other one is normal, so what kind of resources are you going to use? So in that subject of inclusive education, we are generally being taught how we can strategize so that all the learners will be actively participating…FGD, Pre-service teachers, Thogoto TTC

According to the tutors, one of the key reasons why gender mainstreaming was not being assessed is because it is not a learning area. As such, teacher trainees are assessed on the delivery of the content for the mainstreamed learning areas.

R: Yeah, we don't have a learning area like gender, but we have these other learning areas like English, Kiswahili, professional learning areas where some maybe components of gender balance could be captured, but we don't have a main learning area like gender…IDI, Pre-service tutor, Eregi TTC.

R: No, we don't have any evaluation now on gender. Our evaluation is on the content, the course content but not on gender issues…IDI, Pre-service tutor, Kagumo.

The other form of assessment alluded to by tutors was peer-to-peer and self-assessment where the teacher trainees evaluate each other or themselves on whether they are mainstreaming gender in their teaching practices.

R: … in every activity, you need to sit back and assess, critic the results of that task being undertaken, and therefore one of the things that we are doing is peer assessment, and this is the assessment that is done from learners to learners, and this is the assessment where look at what they are doing and make a comment…Then there is also what we call self-assessment therefore, the learner will try and assess themselves, then there is the assessment by the lecturer…So, in these three assessments, which are really pedagogies for training, they will incorporate the aspect of mainstreaming because maybe the task itself will just be about mainstreaming…IDI, Pre-service tutor, Machakos TTC.

5.1.8 Self-efficacy in gender mainstreaming by teacher trainees

As a result of the gender mainstreaming gaps in teacher training, some of the teacher trainees reported a low self-efficacy in their ability to teach in mixed gender schools. For instance, one of the tutors highlighted how some of the teacher trainees found it difficult and intimidating to teach and settle in schools of learners from the opposite gender during their teaching practice. As a result, some teacher trainees requested to be posted in same-gender schools, which was against the stipulated guidelines.

R: Okay. I think partially because some are able when they go for teaching practice because we go and supervise and assess them, some are able to fit in so well while others are not so comfortable and especially, I observed that in ladies teaching in boys' school. You find that they are like, they feel intimidated or they are fearing. And you find other ladies who are teaching in boys' schools who feel at home. So, there are some are well, who feel I think well equipped to go and handle a different gender from theirs. But there are some who are still reluctant. Even when they are being posted, some insist that they want to go to a boys' school, and others will insist they want to go to a girls' school only…IDI, Pre-service tutor, Kagumo.

Gender and Education: Evaluating Gender Mainstreaming Practices in Curriculum Implementation in Kenya

5.1.9 Gender inclusive in their teaching practices among tutors in teacher training colleges

Teacher trainees reported that tutors modeled gender inclusive teaching practices in their classrooms. Some of the practices reported by teacher trainees included providing equal opportunities for them to answer questions, participating in practicals, marking examinations, working in groups, extra-curricular activities, assigning leadership positions in the class, and use of gender-inclusive teaching aids in the classroom. Other gender inclusive practices touched on classroom management such as sitting arrangement and equally following up on their class participation such as following up on absenteeism cases for both male and female teacher trainees. This was important for the teacher trainees who echoed that they would emulate these gender inclusive practices in their own teaching after training. Providing equal opportunities in the participation of physical education activities was underscored as an important indication of gender mainstreaming practices in the institutions alluding to the milestones made in eliminating the gender stereotype threat regarding female participation in sports.

> *R2: Like the institution does, we are not isolated we are mixed together even in the activities that we do for example, when there is a practical to be done, there is no room set aside for females to do the practical; we are allowed to share our views irrespective of gender so when we carry out an activity we do it together for example if we go for field activities like PE (physical education) the games, we are allowed to do it in a mix. There is a time we were training for the football we were just doing it together there was no this one for males or for females. so, we are instilling that in the gender mainstreaming, we go together, we are equal so that we can implement that outside after the training…FGD, Pre-service teacher, Eregi TTC*

The teacher trainees noted that there is a gender balance in the distribution of leadership roles in at TTC institutions.

> *R2: In this school, gender balance is well placed for example when you go to administration we have ladies who are lectures and men who share the staffroom then when we come to the classroom we have leaders who are men they have senior counselors who are ladies and others are men, then when you come to class we have class secretaries who are ladies and those who are men also, when you come to class when you are in groups there are those group leaders who are ladies and those who are men so gender balance in this school is there at all levels…FGD, Pre-service teacher, Eregi TTC*

The teacher trainees noted that they have equal opportunities to participate during academic co- and extra-curricular activities.

> *R1: Our tutors are gender inclusive in their teaching methods. Because when you are in class, we are all given the same opportunities in everything. For example, in math class, if there is a question, they will not say that this one is for males or for females, they will be*

like anyone. And for physical education, when we all go outside to the field, we are given the same opportunity to do everything together. So I think our lecturers are gender inclusive in their practices…FGD, Pre-service teacher, Lugari TTC

R2: When we are in class, no teacher has said that the questions are to be answered by male or female, we are given equal opportunity. Then another thing that is very precious; when they are marking the examinations and all the rest, these people treat us equally; if it is right it is right for males and females. There is no day that a female will write a wrong answer and it will be marked right because you are of a different gender. When we go to the field, we are not supposed to be teachers and gender mainstreamers, we are not supposed to be biased regardless of gender. We are supposed to treat them equally so that we can make this thing the same…FGD, Pre-service teacher, Machakos TTC

Tutors also echoed the teacher trainees' views that they took deliberate steps to ensure that they were gender inclusive in their practices. One of the ways tutors demonstrated gender mainstreaming was in proportionately grouping male and female teacher trainees in-class activities, even in cases where one of the genders was more in number, like in the ECD classes where there were more female teacher trainees.

R: One of the classes, the class you have been able to visit, what we did when coming up with the groups. There were 26 girls and 7 men. Let me call them men. So we have 7 men and 26 ladies…It is in class where we are training teachers for early childhood. We agreed now that we have 26 ladies, we use that as the baseline to do the groups so we said 25 if we divide by 5 we have 5 groups of 5 ladies per group, then we are left with one lady, then we have the seven men who have not been grouped so you distribute them across the 5 groups and you explain to them why you are doing it. Because you don't want to have a group that is primarily men or primarily women, so such an activity brings to the fore the learners such that when they get out there with the learners to teach they need to remember even in college we used to do such kind of things…IDI, Pre-service tutor, Machakos TTC

In cases where gender inclusivity in forming the groups was not possible, for instance, during indigenous language classes, the tutors combined the indigenous groupings where both male and female trainees were represented to have initial discussions before undertaking the assigned activities.

R: They (teacher trainees) discuss in English, then once they have the concept and what to do and almost come up with the story is when they go and sit together to write in their mother tongue…Then you emphasize the reason we are doing this is that we don't want you to just be just yourself in a corner…IDI, Pre-service tutor, Machakos TTC

R: For example, in a class, you see the modern methods of teaching, we involve the students fully, and we involve everybody regardless of whether it is a gentleman or a lady, we

involve them equally. And especially in my class, when I see it is only one gender that tends to volunteer, to participate, I always ask even the others who are not offering to participate also to take part in the lesson. So, we are inclusive…IDI, Pre-service tutor, Kagumo TTC

R: Mmm yes because when you are in class and you are shooting questions of course you spread the questions but now when they are answering questions of course these students you know men are more active they will answer questions then you say this time round I want a lady to answer this question because men volunteer themselves…All the time their hands are up answering the questions you are asking and you find the females are shy so you have to say "two male students have given us the answers so can we have two females" also answering the questions because we don't want just to get the answers from only the female we also want to hear from the men.…IDI, Pre-service tutor, Lugari TTC

However, the implementation of effective gender mainstreaming practices was said to be hampered by the number of teacher trainees in the classroom. For instance, in cases where the male trainees were few, female trainees would tend to dominate class participation. This was echoed by both tutors and teacher trainees.

R: Yeah, we engage all of them but you find when you are teaching process because the females are the majority the males try to shy away, so it depends on an individual so there are teachers who will engage them by giving them thought-provoking questions…But you know there are others who will only go with these students who are active and in most cases, you will find that it is the female students who are active because of the numbers the men try to shy off and keep off… IDI, Pre-service tutor, Eregi TTC

R3: You find that most of the ladies in this school are many like in our class we only have two men. So when they are doing even the teaching and examples, because they are not active the tutor will always be on the ladies' side…FGD, Pre-service teacher, Shanzu TTC

Even in cases where the male teacher trainees were fewer and would tend to shy from class participation, some tutors held the opinion that from their evaluation, the male trainees tended to undertake more rigorous research and were consequently better presenters. To them, the female trainees depended on what their male counterparts had researched. There were also tutors who perceived male teacher trainees to be smarter than female trainees.

R: They are few but you will find in most cases they are the best presenters. You find that in our mode of teaching, the design, much of the work is done by the students. You give them an area they research online, so by the end of the day, you will find the best presenters are the male students they do thorough research, and by the end of the day, you find that the female students are depending on what they have researched on…IDI, Pre-service tutor, Eregi TTC

R: But in normal circumstances, you find the females shy off and males they are always very smart, but you have to make sure you are getting the answers from the two genders because you find you surprise the other one…IDI, Pre-service tutor, Lugari TTC

5.2 Gender responsive teaching practices and associations with school attendance, choice of subjects and academic outcomes

The second research question examined whether teaching practices in basic education enhance gender mainstreaming and the whether the observed practices were related to students' school attendance, choice of subjects, and academic performance.

Summary findings:

- There were no significant differences in the use of gender equitable teaching practices among pre-primary and primary teachers in Math, English, and Science classes. However, at the secondary level, there were significant differences in the use of gender equitable practices in favor of boys. For example, teachers engaged boys more than girls in class activities, boys were called more than girls. There were notable discrepancies and a lack of gender-equitable practices at the high school level in the observed Mathematics, English, and Science classes

- S. At the primary level the main reasons for absenteeism of boys were sickness, domestic responsibilities and lack of food/famine/hunger whereas for girls were domestic responsibilities, sickness, and lack of food. At the secondary level, the main reason for absenteeism for girls the main reasons were school fees problems, sickness and challenges of pregnant and parenting students, On the other hand the challenges for boys were school fees problems, sickness, and paid work outside home.

- Teacher absenteeism was also a notable challenge in both primary and secondary schools. At the primary level, learners in grade six reported that their teachers had missed lessons in the last five schooling days 23% English lessons, 12% Mathematics lessons, and 14% science lessons. At the Secondary level the students reported that teachers has also missed lessons in the last five schooling days 22% Physics, 20% Chemistry, and 16% lessons. The majority of boys and girls in secondary school opted to select humanities subjects. A small proportion of students opted to select Physics as an optional STEM subject. More boys than girls opted to select physics.

- Findings on the associations indicated that:
  At Primary level
  - On average, the performance in English is increased by 5% with a unit increase in the frequency of gender equitable classroom interactions favoring both boys and girls(p-value=0.036)
  - A unit increase in gender mainstreaming compliance in the school resulted in a doubling the English performance (p-value<0.001)
  - Performance in all the subjects was better in schools that had library facilities than in schools without library facilities
  - The odds of attending schools was 4.3 times better with a unit in gender mainstreaming compliance in a school (p-value=0.026)
  - The odds of school attendance are increased by 87% if a primary school provided school feeding than if the primary school did not provide school

---

feeding (p-value=0.010)
- The odds of primary school attendance increased by 3.1 times if the teacher utilized a gender responsive classroom environment (p-value=0.034).
- A unit increase in gender equitable teaching practices led to an increase of 13 and 14 percentage points in Mathematics and English respectively.

At secondary level:
- Performance in Biology, English, Mathematics and Physics is increased by 74%, 30%, 75% and 91% upon increase in the number of times boys and girls are equitably engaged by the teachers in the classroom (p-value<0.001). Therefore, a unit increase in gender-equitable classroom interactions led to an increase in academic performance in English & STEM subjects.
- Performance in all the subjects was better if the schools had library facilities than in schools that did not have the library facilities.
- Performance in Biology, Chemistry, English and Mathematics was better among schools that had school feeding program than in schools that did not have the feeding program by 36%, 44%, 62% and 62%.
- The odds of secondary school attendance are increased by 3.9 times if gender equitable interactions are enhanced in teaching (p-value<0.001).
- The odds of selecting Geography as an optional subject are decreased by 18% if the Pupil Teacher Ratio (PTR) is increased by a unit, holding other factors constant
- The odds of choosing Chemistry was increased 7 times if the subject teacher was very easy to approach than if the subject teacher was not easy to approach.
- The odds of selecting a Physics was increased 3.5 times if the subject was considered to be applicable to the intended future career than if it was not applicable to the intended future career (p-value<0.001).

5.2.1 Descriptive Statistics

Classroom observations were conducted in 13 preprimary schools, 103 mixed-gender primary and secondary schools and 7 teacher training colleges (TTCs). In primary and secondary schools, we made observations in 116 lessons in PP2, Grade 6, and Form 2. In primary classrooms, observations were conducted in Maths, English, and Science, whereas in secondary classes, observations were done in English, Mathematics, Physics, Chemistry, and Biology. The classroom observation rubric had four main categories; gender-responsive language use/communication and participation, gender-responsive teaching and learning materials, gender-equitable classroom interactions, and gender-responsive classroom setup and environment. The indicators in each of the dimensions were either tally or Likert scale items.

The data from the **classroom observations** was collected through video recorded clips which were reviewed post data collection and entered into a preprogrammed tool in SurveyCTO for each five-minute instance until the recorded video lapsed. Only one video recording was done for a lesson (Mathematics, English, or a Science) for each level of study in a given school. The data compiling tool was based on tallies of the teacher engagement with each sex during the lesson, and Likert scale of frequency of observation with the scale (*1=Never, 2= Rarely, 3=Sometimes, 4=Most of the times, 5=Always,* 6=Not observed, and 9=N/A). The compilation themes had been grouped in

terms of the following areas; *Gender responsive language use and participation, Gender-responsive teaching and learning materials, Gender equitable classroom interactions, and Gender responsive classroom set up and environment.* These were to facilitate in assessing the gender mainstreaming in classroom pedagogical practices. Assessment of reliability was done for each of these areas and a global mean was computed for each school/level. The analysis was done for mixed gender schools.

a. Gender-responsive language use, communication and participation

We assessed the frequency of the teacher-student interactions within the dimension of gender-responsive practices. Specifically, we examined the number of times teachers engaged boys and girls in mixed-gender schools during Mathematics, English, or Science lessons. For the Gender-responsive language use, communication, and participation, we had six tally items. These items were tallied in 5 minutes intervals. These included; 1) *Teacher calls on boys and girls equally, 2) The teacher ensures that girls and boys are actively engaged in-class projects and structured activities, 3) Teacher calls/refers to all students by name, 4) Teacher allows girls and boys to speak without interruption, 5) Teacher assigns girls and boys equally to all classroom "chores" (chores not assigned based on gender roles), and 6) Teacher provides a concept in different ways to cater for students with disabilities (representation).*

The (Cronbach alpha) score for the six tally items assessing gender-responsive communication and participation was 0.81 for boys and 0.82 for girls' indicating that the items had a high level of internal consistency. A mean of the tallies for the six items was computed for each gender separately, generating two variables of the mean tallies, i.e. a mean tally of boys' and a mean tally of girls' items. A test of normality was conducted on the two variables using Shapiro Wilk and revealed that the two variables were not normally distributed. A paired test to compare the mean tallies of boys and those of girls was conducted using Wilcoxon signed-rank test. The results indicated that there was no significant difference in the mean number of engagements between boys and girls in pre-primary (PP2) and Primary grade 6 levels. Additionally, there were no significant differences in the use of gender responsive communication and participation in primary schools. However, in secondary Form 2 classes, the Wilcoxon-signed rank test revealed that the mean number of times boys were engaged was significantly higher than girls (p-value<0.001). This is an indication that teachers called boys more than girls, engaged boys more during the structured learning activities, allowed boys to speak without interruption, teachers did not assign classroom chores equally among others. A further test was conducted to find out whether there were any differences by teacher's gender/sex, this was carried out from the overall mean of tallies per class for the gender responsive communication tally items. The results indicated significant differences by female teachers in the PP2 (p-value=0.039) and no significant differences among male teachers in PP2 (p-value=0.465). In Grade 6, there were no significant differences for both male (p-value=0.967) and female teachers (p-value=0.625). In Form 2, there was a significant

difference among male teachers (p-value=0.003) while among the female teachers there were no significant differences (p-value=0.753).

Table 9: Average number of times teacher calls boys and girls during the literacy and STEM lessons

Level	#obs instances	z statistic	Prob > |z|
Pre-primary (PP2)	87	0.86	0.389
Primary (G6)	295	0.31	0.755
Secondary (F2)	170	4.57	0.000

The gender inclusive class practices were assessed using the ordinal scale (Likert scale) on a number of aspects throughout the recorded videos. The Likert scale was based on the frequency of observed practice and the codes assigned were as follows; *1=Never, 2= Rarely, 3=Sometimes, 4=Most of the times, 5=Always, 6=Not observed, and 9=Not applicable (N/A)*. For purposes of the analysis, we excluded Not Observed and Not Applicable (N/A).
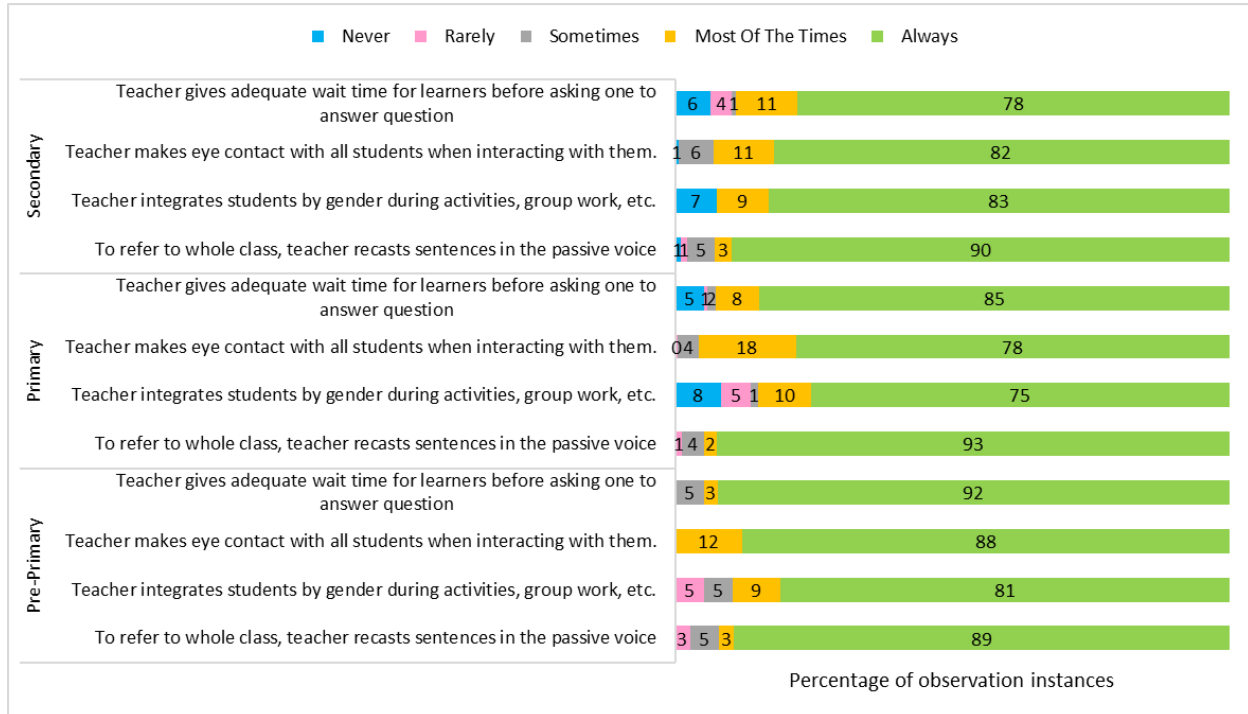
Figure 10: Gender-responsive communication e and classroom participation

Gender and Education: Evaluating Gender Mainstreaming Practices in Curriculum Implementation in Kenya

b. Gender-responsive teaching and learning materials

Assessment of gender-responsive teaching and learning materials was done by use of one question asking if the teacher used illustrations and examples that reflect both genders positively. The question had a five-point Likert scale response on the frequency of observed practices during the lesson *(1=Never 2= Rarely 3=Sometimes 4=Most of the times 5=Always 6=Not observed 9=N/A)*. Figure 11 portrays the results disaggregated by level of schooling. Results indicated that illustrations that reflect both genders positively was used more frequently in the pre-primary level (PP2) which recorded 93% (for *always* or *most of the time*), followed by primary school Grade 6 level which recorded 80% of the instances observed, and finally secondary school level which recorded the lowest, at.76%
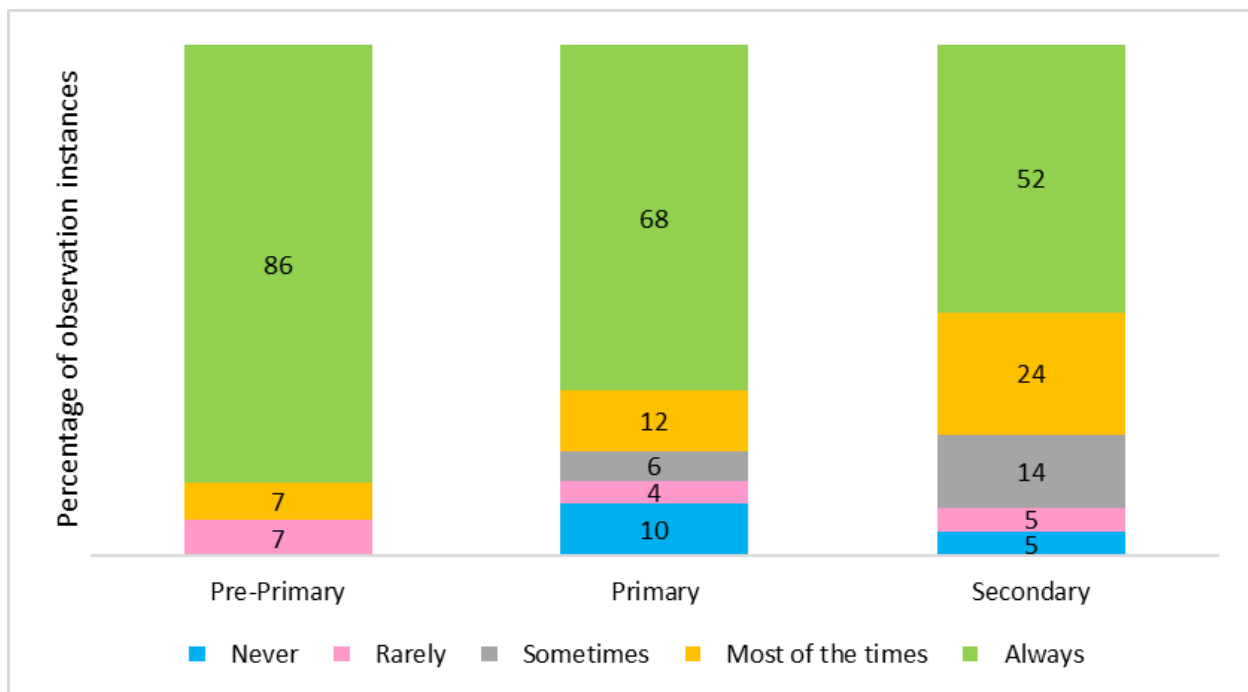
Figure 11: Teacher uses illustrations and examples that reflect both genders positively

c. Gender equitable classroom interactions

Assessment of the gender equitable classroom interactions was done using 16 Likert scale items and 7 tally items. These items focused on gender equitable teaching practices during question and answer, group discussion, demonstration or practical lessons, and when providing students feedback. The tally item entries were recorded in five minutes observation intervals. The items for each gender indicated a high level of internal consistency (Cronbach Alpha) of 0.77 and 0.79 for boys' and girls' items respectively. A composite mean was generated of the number of times gender equitable classroom interactions were used when engaging boys and girls during the Mathematics, English, and science classes. The Shapiro Wilk test was utilized to check for data normality. The findings showed that the data were not normally distributed. The Wilcoxon signed-

rank test was conducted on the mean tallies of boys versus those of girls. The results are disaggregated by schooling levels (PP2, grade 6, and form 2). Findings revealed that there were no significant differences in the instances of gender equitable classroom interactions by gender at pre-primary and primary school levels. At the secondary level, there were significant differences in the number of gender equitable classroom interactions in favor of boys (p, <.001). A further test was conducted to find out whether there were any differences by teacher's gender/sex. This was carried out from the overall mean of tallies per class for the gender equitable classroom interactions tally items. The results indicate no significant differences by teacher's gender in PP2. In Grade 6, there were no significant differences for both male (p-value=0.723) and female teachers (p-value=0.424). In Form 2, there was a significant difference among male teachers (p-value=0.005) while among the female teachers there no significant differences (p-value=0.833). See Table 10.

Table 10: Test on the mean number of times boys and girls are engaged on items regarding gender-equitable classroom interactions

Level	#obs instances	z statistic	Prob > |z|
Pre-primary (PP2)	87	0.76	0.449
Primary (G6)	295	0.48	0.630
Secondary (F2)	170	4.16	0.000

An assessment of gender equitable classroom interactions during demonstrations and practical lessons revealed various patterns. Generally, 100% pre-primary and secondary school teachers practiced connecting classwork with everyday life using a gender lens most of the time, compared to 11% of primary teachers who never practiced this. At the primary and secondary levels, there was a notable positive observation in practical activities/demonstrations where teachers used tactics to encourage learners to engage with the specimens. We observed that pre-primary teachers always ensured that group discussions took gender topics into consideration. However, at the primary level, only 40% of teachers consistently ensure that group discussions took gender issues into consideration, compared to 25% at the secondary level, where the majority of teachers (50%) did not practice this consistently. 10% of primary school teachers never took into consideration gender issues during group discussions. While most teachers across the three levels strived to ensure that the students' groups were mixed, a small percentage never mixed up the student groups pre-primary 6%, primary 21%, and secondary 14%. Most of the teachers across the different levels phrased questions to reflect gender representation. Another positive observation was that teachers across the levels generally allowed sufficient time for all students (boys and girls) to answer questions, with percentages ranging from 77%-86% some teachers never practiced this pre-primary 2%, primary 5%, and secondary 14%. See Figure 12.
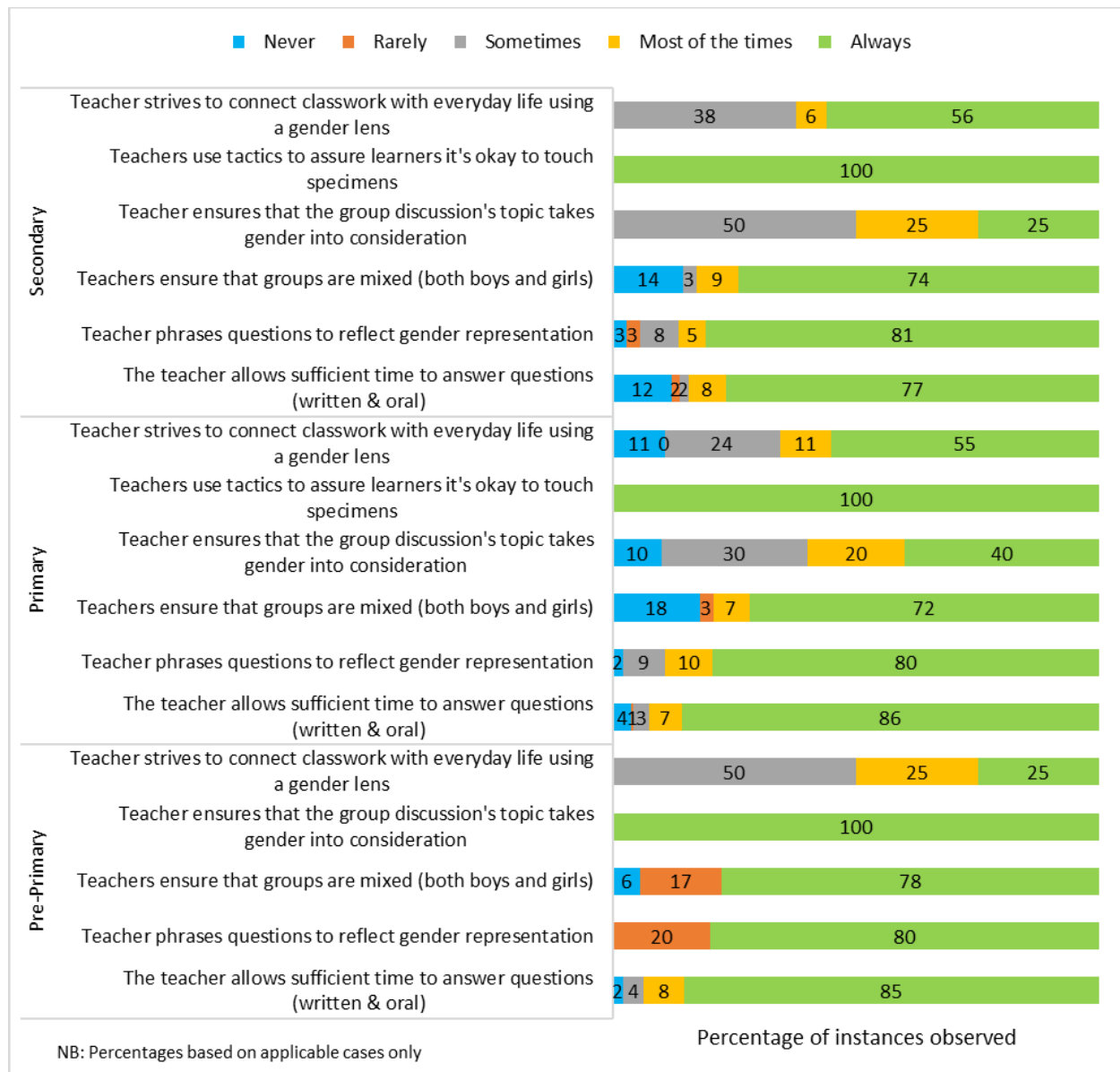
Figure 12: Gender equitable classroom interactions

An examination of the gender-responsive classroom interactions further revealed that teachers across the three levels of education exhibited inconsistencies in practices such as the teacher's use of fair/unbiased corrective measures for both boys and girls. The consistent practice (always) was 59% at pre-primary, 78% at primary, and 36% at secondary level.

d. Gender Responsive Classroom Set-up and Environment

The teachers generally made the classroom environments safe through the use of varied tasks for self-regulation across the three levels. Regarding creating a culture of positive and respectful

relationships, teachers of secondary school had higher levels of consistency (80%) compared to those at primary 70% and pre-primary 66%. Another positive observation was that teacher grooming across the different levels was professional, which is critical for conducive learning with minimal disruption. The majority of teachers utilized classroom setup practices that enhanced the participation of boys and girls pre-primary 75%, primary 72%, and secondary 79%, with the remaining proportions using inconsistent practices. Across the three levels, the classroom set up generally mixed boys and girls pre-primary 74%, primary 80%, and secondary 85%. See Figure 13.
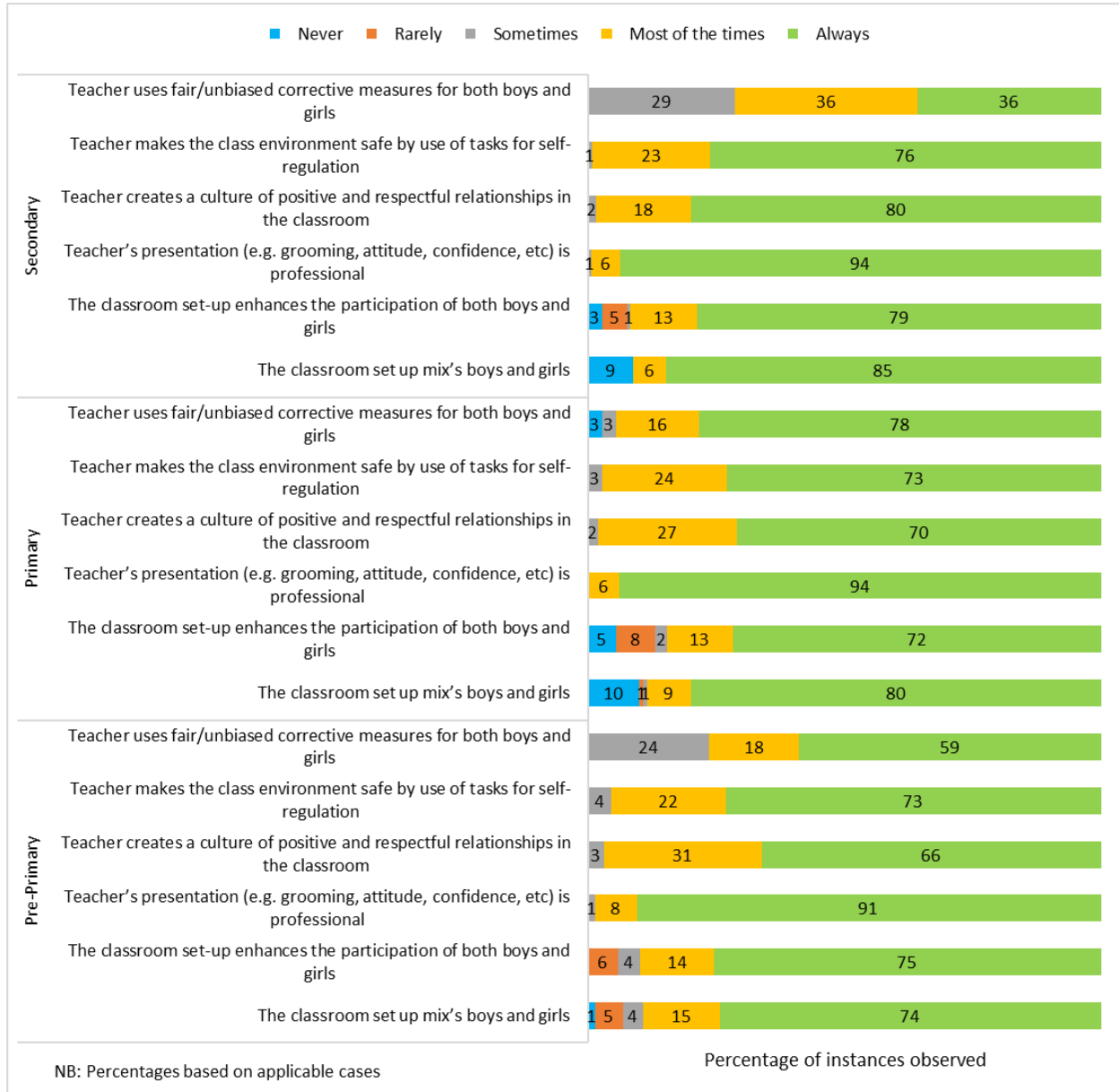
Figure 13: Gender-responsive classroom setup and environment

5.2.2 Gender differences in classroom engagement practices

Gender and Education: Evaluating Gender Mainstreaming Practices in Curriculum Implementation in Kenya

We computed the mean overall tallies for the engagement of boys and for girls and the absolute differences between the gender based engagements. The absolute difference was then divided into three equal categories, namely; small difference, medium difference, and large difference as described below.

- Small difference refers to the absolute differences in the mean number of engagements with boys and girls in classrooms that were approximately the same, the differences were close or equal to zero
- Medium difference refers to the absolute differences in the mean number of engagements with boys and girls that were moderate (i.e. not small and not large)
- Large differences refers to the absolute differences in the mean number of classroom engagements with boys and girls that are large or in other words far from zero
- In Table 11, P is the number of classes observed in primary and S is the number of classes observed in Secondary, diff is a shortened form of the word difference.

The results portrayed in Table 11 show the distribution of different categories. The overall row provides the number of learners exposed to large differences in brackets and in primary school level, the number translates to 34% of total enrolment in all the schools that observations were done and in secondary school level, the number translates to 21% meaning that one in every three learners (primary level) and one in every five learners (secondary school levels) respectively are exposed to large differences in teacher engagements with learners.

Table 11: Categories of classroom pedagogical practices gender engagement difference by counties

County (p=#/S=#)	Primary School level -Grade 6 (%)			Secondary School level – Form 2 (%)		
	Small diff	Medium diff	Large diff	Small diff	Medium diff	Large diff
Busia (P=8/S=6)	25.0	25.0	50.0	0.0	50.0	50.0
Garissa (P=2/S=1)	0.0	50.0	50.0	0.0	0.0	100.0
Mandera (P=4/S=2)	75.0	0.0	25.0	100.0	0.0	0.0
Marsabit (P=5/S=3)	20.0	60.0	20.0	0.0	33.3	66.7
Wajir (P=5/S=1)	20.0	40.0	40.0	100.0	0.0	0.0
West Pokot (P=7/S=1)	42.9	42.9	14.3	100.0	0.0	0.0
Tana River (P=5/S=2)	40.0	0.0	60.0	0.0	100.0	0.0

Turkana (P=4/S=2)	25.0	50.0	25.0	100.0	0.0	0.0
Samburu (P=2/S=4)	50.0	50.0	0.0	50.0	50.0	0.0
Nairobi (P=6/S=4)	16.7	33.3	50.0	50.0	25.0	25.0
Overall (P=48/S=26) (exposed)	**31.3**	**33.3**	**35.4 (851)**	**38.5**	**34.6**	**26.9 (480)**

5.2.3 Descriptive Statistics of Gender Parity Index

Using the enrolment data collected from the 250 schools, the Gender Parity Index was computed and then disaggregated by counties for each school level (i.e Primary and Secondary). Table 12 indicates that the overall Gender Parity Index (GPI) was low at both primary and secondary levels at 0.93 and 0.82 respectively. According to the statistical booklet of 2019, the national figures differ slightly at the primary level (0.97) and at the secondary level (1.00). The GPI varied across different counties at the primary and secondary levels. At the primary level, it is quite notable that the GPI favored girls in Nairobi and Turkana counties at 1.02 and 1.15, respectively. The data reveals gender parity in Marsabit County at 1.00, similar to the national figure recorded in 2019. On the other hand, the GPI was lowest in Mandera and Garissa counties standing at 0.76 and 0.72, respectively, despite GPI being in favor of girls in both counties at 1.19 and 1.09, respectively, in 2019. At the secondary level, the GPI was lowest in Wajir at 0.29, which is a big drop from the 2019, which was in favor of girls at 1.89 (Ministry of Education, 2019). On the other hand, the GPI is in favor of girls in Busia (1.43), Marsabit (1.68), Tana River (1.01), and Turkana (1.35). Compared to the 2019 figures, the GPI shifted in favor of girls in Busia, while the narrative remains the same in favor of girls in Turkana and Tana River despite the slight drop. Samburu County also reported a significant drop from 2019 from 1.52 to 0.77.

Table 12: Gender parity index

County	Primary GPI	Secondary GPI	2019 SA: Primary GPI	2019 SA: Secondary GPI
Busia	0.97	1.43	1.02	0.96
Garissa	0.72	0.68	0.81	1.09
Mandera	0.76	0.72	0.58	1.19
Marsabit	1.00	1.68	1.00	1.00

Gender and Education: Evaluating Gender Mainstreaming Practices in Curriculum Implementation in Kenya

County	Primary GPI	Secondary GPI	2019 SA: Primary GPI	2019 SA: Secondary GPI
Wajir	0.86	0.29	0.75	1.89
West Pokot	0.96	0.65	0.98	1.09
Tana River	0.96	1.01	0.95	1.39
Turkana	1.15	1.35	0.91	1.41
Samburu	0.89	0.77	0.91	1.52
Nairobi	1.02	0.69	1.01	0.94
Total	0.93	0.82	0.97	1.00

5.2.4 Descriptive statistics of school attendance

School attendance was irregular for some students. Only 84 percent of Grade 6 learners were present in school for a period of five consecutive schooling days at the time of the interviews. Slightly more girls (85 percent compared to boys (83 percent) were present. At the secondary school level, 87 percent of the learners attended school for five consecutive days with 86.6 % of girls and 87.2% of boys in attendance.

Gender and Education: Evaluating Gender Mainstreaming Practices in Curriculum Implementation in Kenya
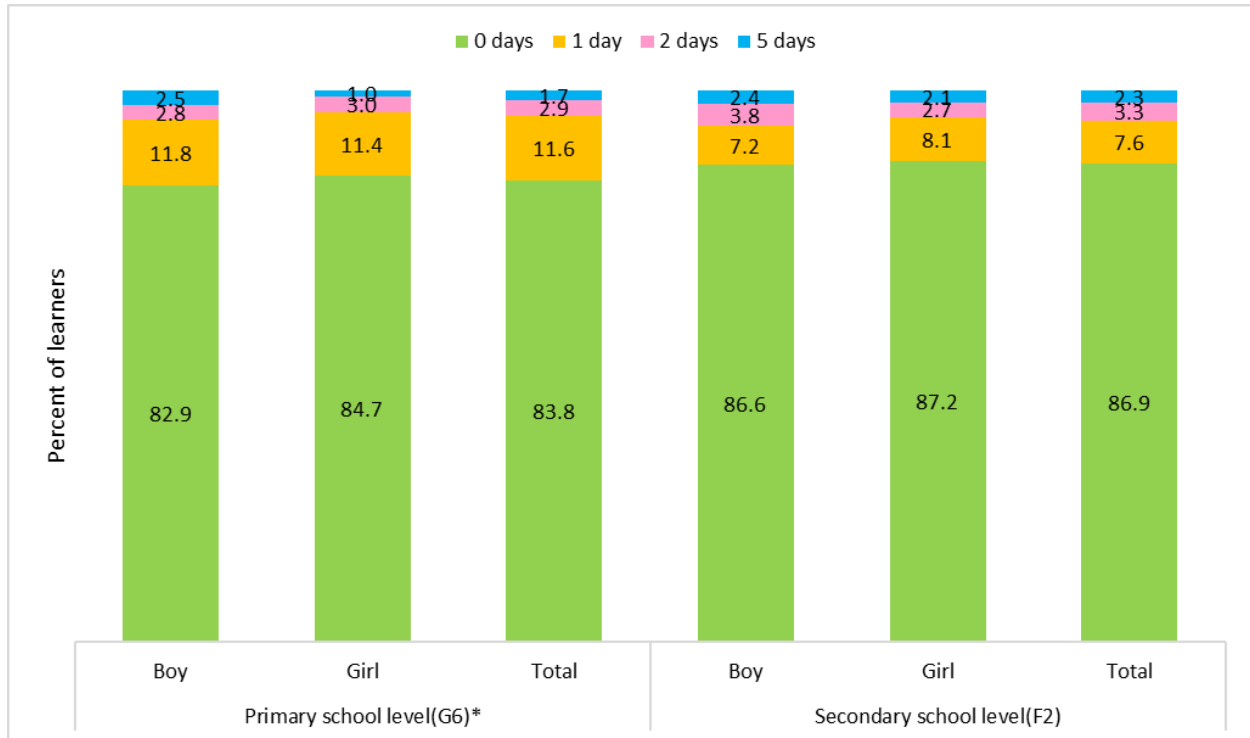
Figure 14: Number of days absent in the past five schooling days

5.2.5 Descriptive Statistics of Reasons for Absenteeism among Learners

Regular school attendance is a critical contributor to learning outcomes. At the primary school level, the inconsistent attendance was attributed to three main reasons amongst the girls and boys including sickness, domestic responsibilities, and school fees problems. More boys (67%) than girls (59%) reported sickness as the main reason for absenteeism. On the contrary, slightly more girls (10%) than boys (8%) reported school fees as the third reason for absenteeism.
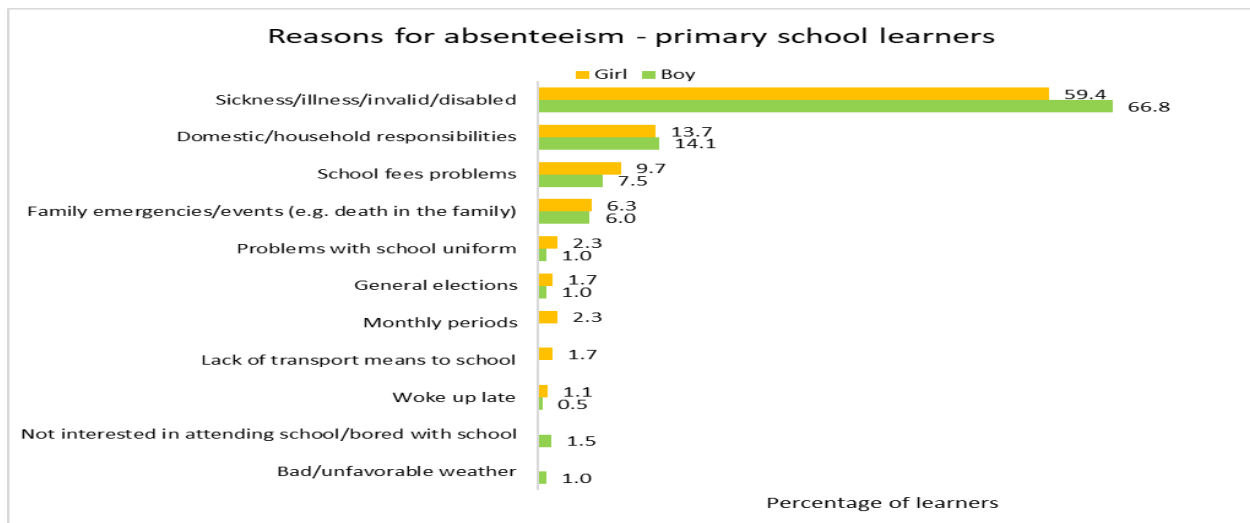
Figure 15: Reasons for learner's absenteeism -primary school level

Reasons for absenteeism by the secondary school learners

Girl Boy

Reason	Girl	Boy
Sickness/illness/invalid/disabled	45.3	42.9
School fees problems	35.1	41.6
Monthly periods	7.4	
School co-curricular activities	3.4	1.9
Problems with school uniform		3.7
Domestic/household responsibilities	2.0	1.9
Suspended/expelled from school	0.7	2.5
Family emergencies/events (e.g. death in the family)	2.0	0.6
Not interested in attending school/bored with school	0.7	1.9

Percentage of learners
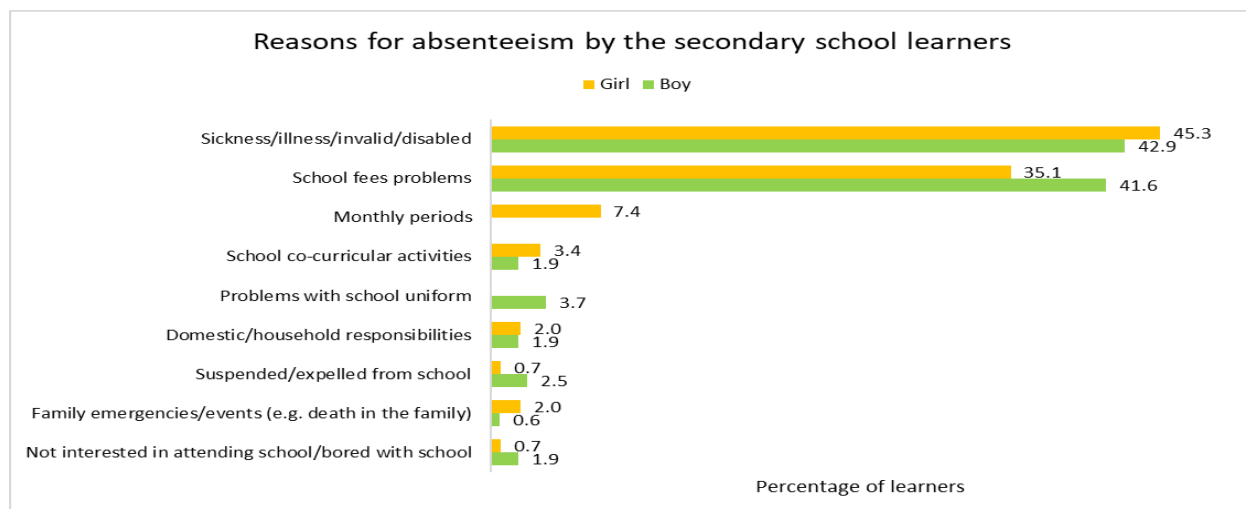
Figure 16: Reasons for learner's absenteeism -secondary school level

Among secondary school learners the main causes of absenteeism were lack of school fees and sickness (see Figure 16). Disaggregated by gender, sickness accounted for 45% and 43% of boys and girls being absent respectively. Moreover, school fees accounted for 42 % and 35% of boys and girls being absent respectively.   For girls, the third most common reason for missing school was monthly periods, while for boys it was lack of necessities such as school uniforms.

Girls Boys

Reason	Girls	Boys
Sickness/illness/invalid/disabled	28.6	30.9
Domestic/household responsibilities	29.4	21.1
Lack of food/famine/Hunger/absence of school feeding	11.1	12.2
Paid work outside home	3.2	7.3
Peer influence	0.8	7.3
Monthly periods	7.1	
Not interested in attending school/bored with school	3.2	5.7
Nomadic migration	1.6	4.9
Childcare challenges for pregnant/parenting student	3.2	
Parental negligence/attitude to education/ignorant	1.6	1.6
Bad/unfavorable weather	1.6	1.6
Cultural practices (e.g. rites of passage)	3.2	1.6
Distance to school	2.4	1.6
School fees problems	2.4	1.6
Drug/Substance use		1.6
Insecurity/unsafe to travel to school		0.8
Sexual harassment	0.8	

Percentage of respondents/heads

Figure 17: Main reasons for absenteeism among Grade 6 learners as provided by the institutional heads

Institutional heads reported that the three most common reasons for absenteeism at the primary level for both boys and girls were sickness, domestic chores, and lack of food. More girls standing at 29% engaged in domestic chores compared to 21% boys. The fourth reason reported for absenteeism for boys was paid work outside the home and peer influence, while monthly periods was the reason that girls were absent from school.
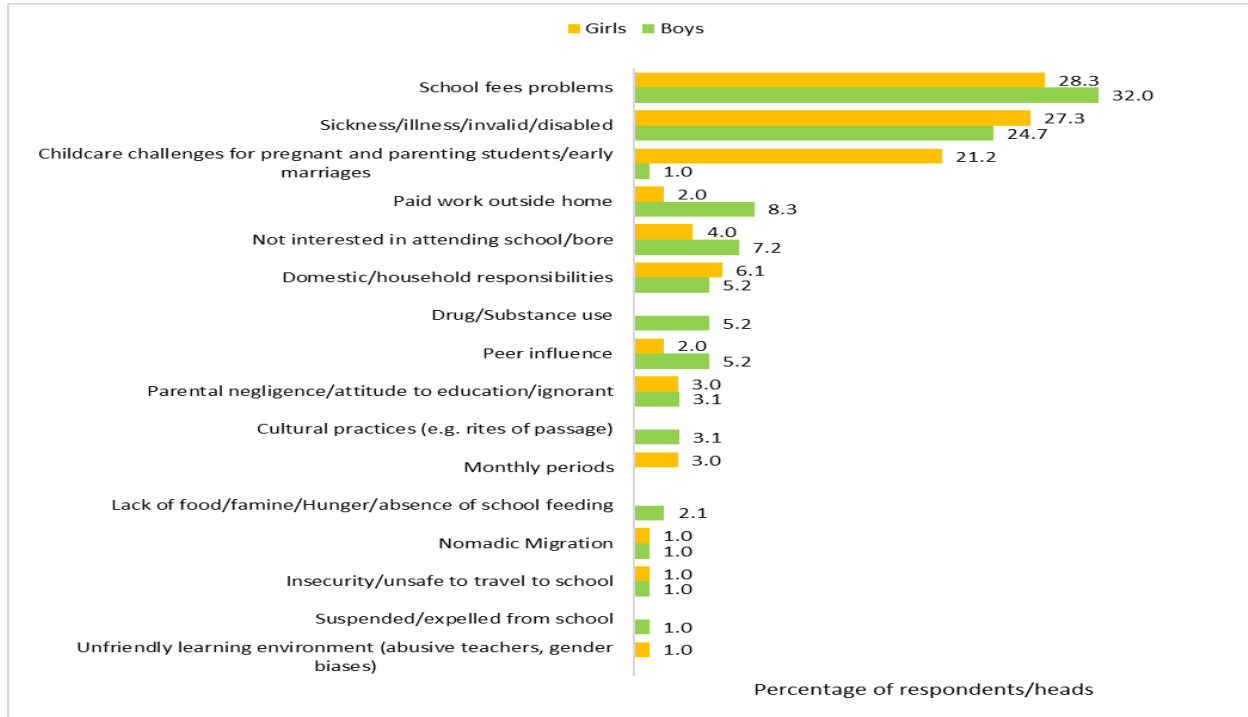
Figure 18: Main reasons for absenteeism among Form 2 students as provided by the institutional heads

At the Secondary level, the main reasons reported for student absenteeism among both boys and girls were lack of school fees and sickness. The third reason reported for girls was childcare challenges for pregnant and parenting girls at 21%, while paid work outside the home was the third reason at 8.3 % for boys.

5.2.6 Descriptive Statistics of Teachers Absenteeism

Learners were asked whether their teachers of Mathematics, English, and Science subjects had missed at least one or more lessons for the past five schooling days. The findings indicated irregularities in teacher attendance. For instance, at the primary level, 23% learners in grade six reported that their teachers had missed English lessons, 12% reported that their teachers had missed Mathematics, and 14% reported that their teachers had missed Science lessons. At the Secondary level, 22% of learners reported that their teachers had missed Physics, 20 % reported that their teachers had missed Chemistry, and 16 percent of learners reported that their teachers had missed Biology lessons.
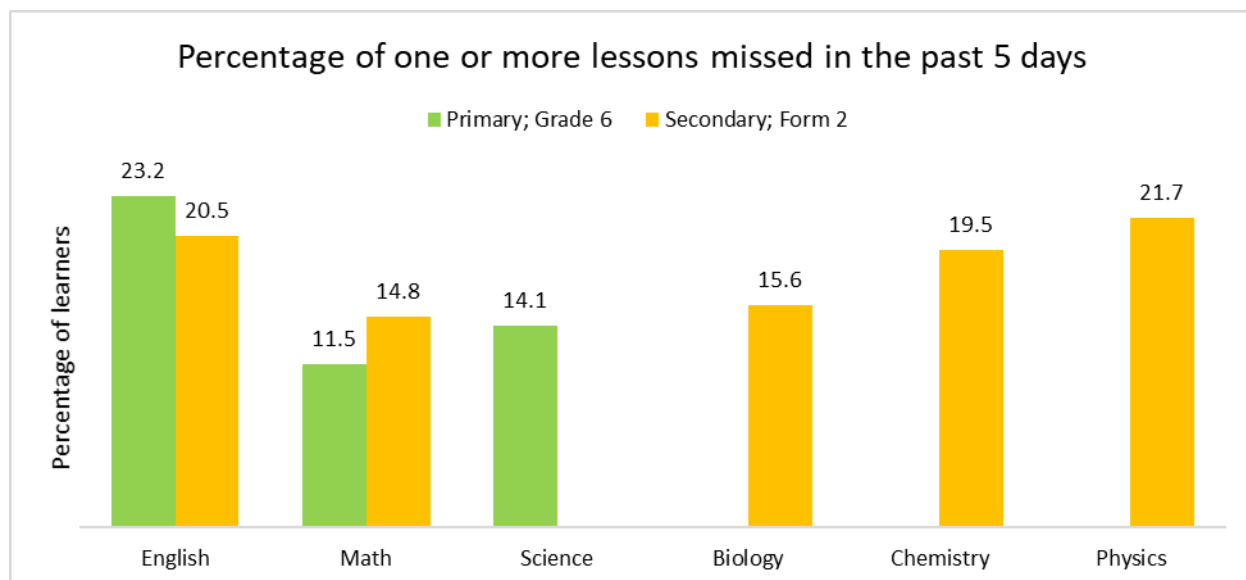
Figure 19: Teacher's absenteeism

5.2.7 Student's Expected Choice of Subjects when Transitioning to Form 3

The findings on preferred subject choices by Form two students indicated that generally, there was a low preference for selecting Physics as an optional subject, as highlighted in Figure 22. However, a chi-square test of proportions indicates that a higher proportion of boys than girls preferred to choose Physics as an optional subject in Form 3 at 33 percent compared to girls at 20 percent. A higher proportion of girls than boys preferred to take Biology at 88% as compared to girls at 82%. In addition, there was a slightly higher proportion of boys at 31%t taking Geography compared to 25% of girls. On the other hand, 85% of girls had the intention to select CRE/IRE in Form 3 compared to 78% of boys. However, a scrutiny of the other optional subjects showed that there was no significant difference in the selection of History, Agriculture, and Business studies.
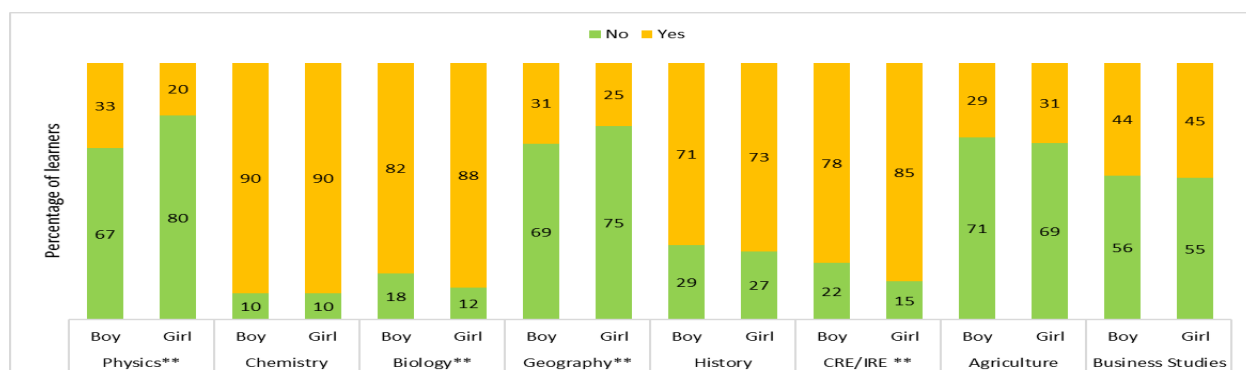
Figure 20: Student's choice of optional subjects during the transition to Form 3

Figure 21 indicates that the main motivation for both boys and girls selection of optional subjects was a good performance, perceived interest in the subjects, the applicability of the subjects to their future career aspirations, and the perceived quality of teaching.
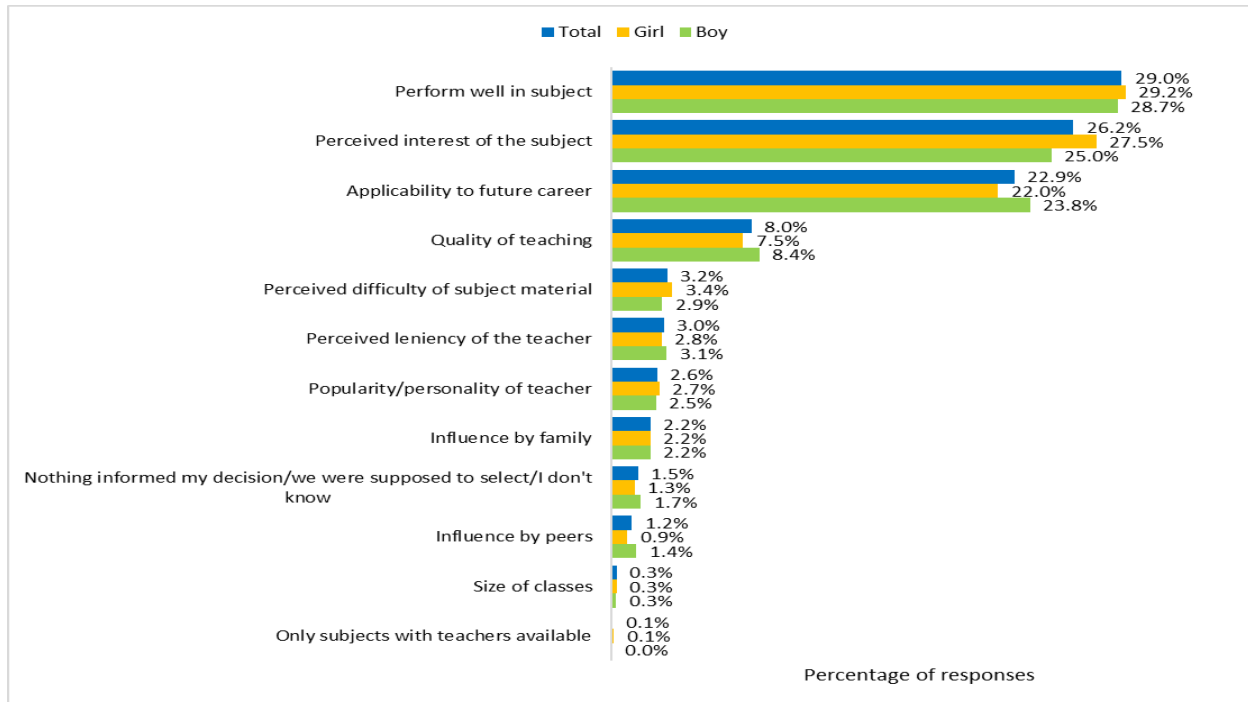
Figure 21: Reasons for choosing various optional subjects that Form 2 students intended to select in Form 3 [Multiple response questions]

5.2.8 Gender mainstreaming compliance index/score (GMCI

We mapped out items from the institutional questionnaire that fall within the six objectives of the Education and Training Sector Gender policy. This was computed for mixed-gender schools. See appendix 2 indicating the items and scoring criteria. Dichotomous variables were generated by allocating a score of 1 if availability of resource or gender balance t and 0 otherwise. The variables of interest were as fo Gender parity index (GPI); Mixed gender library set-up allocating; Boys and girls toilets within the school compounds; Separate toilet doors/stances for boys and girls; Functional bins for disposing sanitary towels for the students and teachers; Equal utilization of playground by boys and girls; Head teacher gender parity; Gender balanced student leadership; Balanced BoM gender composition; Balanced gender parents association; BoM trained on gender issues; PA trained on gender issues; BoM discussed gender issues during meeting; Gender balance among heads of departments; QASO addressed gender issues during inspection; Availability of guidelines on sexual harassment of students, teachers and non-teaching staff; and PHO addressed gender issues.

We applied psychometric analysis and dimension reduction procedures to identify the items that were most important in addressing the gender mainstreaming compliance in primary and

secondary schools respectively. In particular, we conducted a reliability test on the twenty items to identify items that reduced the internal consistency due to their low item -rest and /or item test correlations. We further utilized the principal component analysis (PCA) to identify the constructs/components that explained the highest proportion of variation. Items that had low-factor loadings were dropped. The procedures were applied for primary and secondary levels separately because of their unique dynamics. The primary school level resulted into 3 components explaining 71% of the total variation and for the secondary school level, we obtained two components explaining 50% of the total variation. The identified items were summed together to obtain a GMCI for primary and secondary school levels respectively.

We summed the items that were identified for inclusion in the gender mainstreaming compliance index at the primary and secondary school levels. The overall score at the primary school level was 61.1% which was higher than that of the secondary school level which was 46.2%. In the primary school level, the county that demonstrated the highest gender mainstreaming compliance was Tana River County, and the lowest was Samburu County. This implies the Tana River County scored positively on most of the items on the gender compliance index. On the other hand, at the secondary school level, the county that attained the highest gender compliance score was Wajir County while the lowest score was recorded in Garissa County. Figure 22 shows the results.
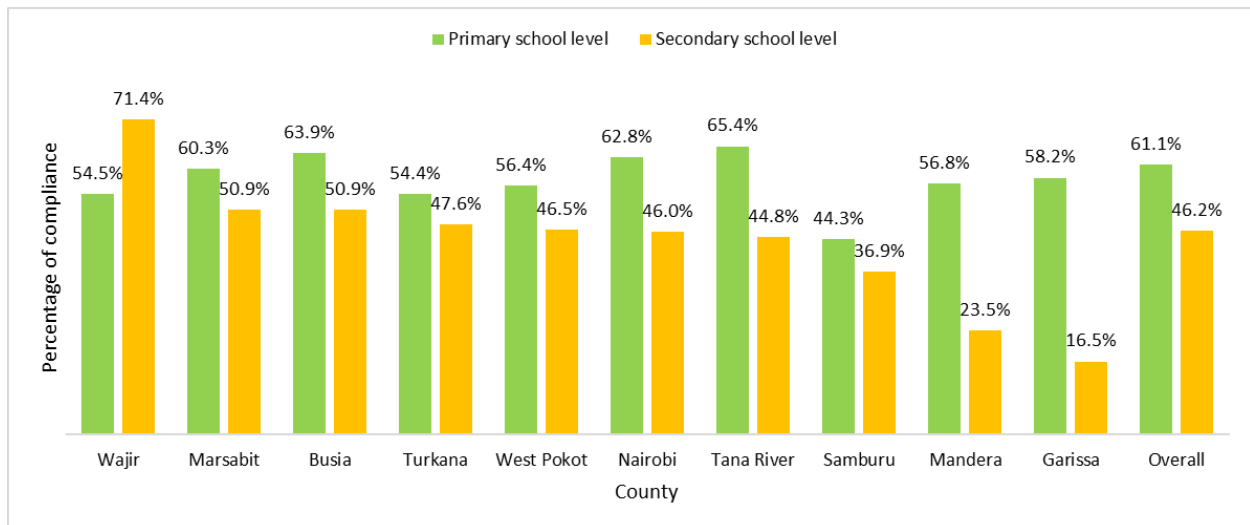
Figure 22: Primary and secondary school GMCI by counties

5.2.9 Regression analysis to assess the relationship between academic achievement, school attendance, and school choice against classroom pedagogical practices

a. Gender responsive teaching and academic achievement at primary

Firstly, looking at the primary school level, we used the GEE models as it is suitable for longitudinal/clustered/panel data (Wang, 2014). We had exam results for five years for each school (where applicable) from year 2017 to 2021. The mean scores for each subject for the Kenya

Gender and Education: Evaluating Gender Mainstreaming Practices in Curriculum Implementation in Kenya

Certificate of Primary Education and Kenya Certificate of Secondary Education for the years 2017 to 2021 were gathered and used as a proxy for learning outcomes. The GEE is also important when inference is done at an individual level. In determining the explanatory variables to be included in the model, the quasi-likelihood under the independence model criterion (QIC) and QICu were used. Moreover, the QIC and QICu facilitated the choice of the distribution family to be utilized in the model. The inverse Gaussian distribution family with log link function emerged as the best for all models regarding performance in each of the three subjects against the explanatory variables at the primary school level. The correlation structures namely exchangeable, autoregressive (lag 1) (AR1), and independent were assessed by running pairs of naïve and robust models with each correlation structure and comparing the difference in the standard error's values, the correlation structure that produced the smallest differences in the standard errors between the naïve and robust model was selected. The correlation structure (exchangeable) emerged the best for the three primary school level models on performance. The explanatory variables that gave rise to models with the smallest values of the QIC and QICu were considered for inclusion.

The results indicated holding other factors constant; the English mean score in private schools was 20% higher than in public schools (p-value<0.001). After adjusting for other factors, a school with a library facility (designated reading area) on average performed better in Mathematics, English, and Science by 29%, 23%, and 20%, respectively (each p-value<0.001)than a school that did not have library facility. On average, holding other factors constant, a unit increase in gender-responsive teaching (p-value=0.036) resulted in a 5% increase in performance in English performance (p-value=0.036, holding other factors constant). Finally, on average, the mean score of Mathematics is increased by 82% if the student class attendance rate improved by a percentage after adjusting for the other factors (p-value=0.045).

b. Gender responsive teaching and academic achievement at secondary

At the secondary school level, we also utilized the GEE model. QIC and QICu criteria were used in determining the explanatory variables to be included, as well as the distribution family to be considered in the regression model. The inverse Gaussian regression family was the log link function and was the best family for all the five regression models involving the relationship to the performance in the five subjects, namely mathematics, English, Biology, Chemistry, and Physics. The ideal correlation structure was determined by comparing the naïve and robust models under different correlation structures. The model involving performance in mathematics, AR1, was the most ideal, and all the other four exchangeable models were the most ideal.

Results indicated that holding other factors constant, a unit increase in gender mainstreaming compliance in the school resulted in a double improvement in English performance (p <0.001) and a decrease in Chemistry performance (p<0.001). An increase in the number of years school existed resulted in a 2% increase in English subject performance and a 3% decrease in Chemistry subject performance after adjusting for the other factors. Performance in English was better in

private schools than in public schools by 78%, and in Biology and Chemistry, it was better in public schools than in private schools by 38% and 78%, respectively. Performance in Biology, Chemistry, English, and Mathematics was better among schools that had a school feeding program than schools that did not have the program by 36%, 44%, 62%, and 62%, respectively. Performance in all the subjects was better in the schools that had library facilities than in schools that did not have library facilities. A slight decrease in performance was observed across all the subjects following an interaction effect between the gender responsive language use by boys and girls. Performance in Biology, English, Mathematics, and Physics increased by 74%, 30%, 75%, and 91% upon an increase in the number of times boys and girls were equally engaged by the teachers in the classroom ($p<0.001$). Performance in Biology, Chemistry and Mathematics increased by 21%, 33% and 20% respectively upon increase in the number of physical classroom facilities that enable a better learning environment, holding other factors constant. Holding other factors constant, improving school attendance by a percentage resulted in improvement in performance in Chemistry, English and Mathematics 20 times, 2.1 times and 3.5 times respectively.

c. Gender Mainstreaming Compliance and School Attendance

We assessed the associations between the proportion of Grade 6 and Form 2 student's school attendance using the generalized linear models with the binomial as the distribution family and logit as the link function. Akaike Information Criterion (AIC) and Bayesian Information Criterion (BIC) were used in determining the variables included in the model for each level of study. The results indicated that holding other factors constant, at primary school level, the odds of attending schools was 4.3 times better if a school increases the number of gender mainstreaming compliance items by a unit (p-value=0.026). Still in primary level, the odds of school attendance are reduced by 1% in the pupil teacher ratio (PTR) is increased by a unit (p-value=0.005), however at secondary school level, the odds of school attendance are increased by 7% if the PTR increases by a unit (p-value=0.001), holding other factors constant. The odds of school attendance are increased by 87% if a school provides school feeding than to a primary school that doesn't provide school feeding (p-value=0.010), holding other factors constant. The odds of primary school attendance are increased by 4.2 times if instances of male responsive language use is increased by a unit (p-value=0.030), holding other factors constant, however the frequency of engaging in these gender responsive language use leads to a 81% decrease in the odds of primary school attendance, meaning that there is need for an aspect of moderation to be applied. The odds of primary school attendance are increased by 3.1 times if teacher utilizes a gender responsive classroom environment (p-value=0.034). The odds of secondary school attendance increased by 3.9 times if gender equitable interactions are enhanced in teaching (p-value<0.001), after adjusting for the other factors. In addition, the odds of secondary school attendance are increased by 21% if teaching and learning materials/resources are increased by a unit (p =0.018).

d. Secondary School Optional Subject Choice

The relationship between gender responsive pedagogy and the intended choices of optional subjects in Form 3 was assessed by use of binary logistics regression models. The optional subjects assessed were sciences (Biology, Chemistry, and Physics) and humanities (Geography). AIC and BIC criteria were used in in the choice of the explanatory variables. Student weights were used to correct the sample imbalances and improve the estimation of parameters. Holding other factors constant, the odds of choosing Biology subject was twice 2.3 times more among girls than boys (p-value<0.001). The odds of choosing chemistry subjects are decreased by 96% if the subject taught by a female teacher than a male teacher (p-value<0.001), holding other factors constant. The odds of selecting Geography subject are increased by 13.7 times if the number of items on school's gender mainstreaming compliance are increased by a one. The odds of selecting Geography as an optional subject are decreased by 18% if the PTR is increased by a unit, holding other factors constant. The odds of choosing the Geography subject are increased by 2.4 times if the gender equitable interactions in classroom are observed (p-value=0.004), after adjusting for other factors. The odds of choosing Chemistry subject are increased by 7 times if the subject teacher is very easy to approach than if the subject teacher is not easy to approach. The odds of selecting Physics subject are increased by 3.5 times if the subject is considered to be applicable to the intended future career than if it is not applicable to the intended future career (p-value<0.001). The odds of choosing Physics as well as Geography are increased by 3 times if the popularity or personality of the teacher is considered as good than if the the personality is not likable (p-values= 0.031 and <0.001 respectively).

5.3 Guidelines to mainstream gender issues in basic education

The third research question explored the policies, practices, guidelines, decrees, and curriculums that have been put in place to mainstream gender issues in the curriculum and the extent to which the strategies interact with the ecosystem to promote gender mainstreaming in education.

Key Findings
- More than 50% of public and private primary and secondary schools did not have guidelines on sexual harassment and gender-based violence for teachers in the schools.
- Between 40% - 50% of the public and private primary and secondary schools did not have guidelines for sexual harassment and gender-based violence for students in the schools. The majority of the schools that indicated they had the guidelines could not avail them to the research team.
- More than 98% of the schools had separate toilet stances for boys and girls however, the majority of the schools did not have separate toilets for learners with special needs.
- At the pre-primary level, the teaching staff was predominantly female, whereas, at the primary and secondary levels, the proportion of male teachers was more than that of females.
- An examination of teaching staff in the subjects of interest at the primary and

---

> secondary level indicated that more male teachers were allocated to teach STEM subjects.
> - Quality Assurance and Standards Officers addressed issues of gender mainstreaming in 60% of primary and 46.9% of secondary institutions. The focus on gender issues by the Public Health Officers was low in both primary 36.6% and secondary 22.1%.
> - The composition of the Board of Management and the Parent's Association in both primary and secondary schools was predominantly male.

5.3.1 Availability and implementation of policies on gender issues in schools

We examined the availability and implementation of policies on gender issues in schools, such as sexual harassment, gender-based violence, physical, written, and verbal abuse, and child care. Table 13 shows that almost half of the public and private schools did not have guidelines on gender-based violence and sexual harassment for the teachers in the schools. Less than 20 percent of the institutions could show the guidelines at the primary level for public (16%) and private (13%) schools, while 26 percent could show the same in public secondary schools. Only 5 percent of private secondary schools showed the guidelines to the study team. Regarding guidelines for students, in primary schools, only 13 percent of public and 17 percent of private primary schools, compared to 26 percent of public and 5 percent of private secondary schools, were able to show the relevant guidelines available for students.

Table 13: Availability of guidelines on sexual harassment and gender-based violence

Are there guidelines on sexual harassment and GBV	Primary school level		Secondary school level	
	Public	Private	Public	Private
for teachers in the school?				
Yes Seen;	15.7	12.5	26.0	5.0
Yes, Not Seen;	40.2	37.5	26.0	50.0
No	44.1	50.0	48.1	45.0

for students in the school?				
Yes See;	12.7	16.7	21.2	15.0
Yes, Not Seen	44.1	37.5	26.9	45.0
No	43.1	45.8	51.9	40.0
for non-teaching staff in the school?				
Yes Seen	7.8	12.5	11.5	5.0
Yes, Not Seen	35.3	45.8	26.9	45.0
No	56.9	41.7	61.5	50.0

5.3.2 Knowledge of policies that promote gender equality

Among the schools that reported having guidelines on sexual harassment and gender-based violence, 97 percent of both public and private schools reported that they sensitized teachers and students on the contents and requirements of the guidelines. As for the non-teaching staff, over 75 percent of the schools reported undertaking sensitizing initiatives on the same.

Table 14: Does the school sensitize the sexual harassment and gender-based violence policies among students, teachers, and non-teaching staff?

	Primary school level		Secondary school level	
Does the school sensitize guidelines among…	**Public**	**Private**	**Public**	**Private**
Teachers				
No	3.5	0.0	5.6	0.0

Yes	96.5	100.0	94.4	100.0
Students				
No	4.8	0.0	8.3	7.7
Yes	95.2	100.0	91.7	92.3
Non-teaching staff				
No	19.0	0.0	21.1	16.7
Yes	81.0	100.0	78.9	83.3

5.3.3 Qualitative findings on the availability and awareness of policies on the prevention of sexual harassment in teacher training institutions, schools, and offices

Majority of the teacher trainees and their tutors reported knowledge of guidelines promoting gender equality in their institutions. The guidelines were mostly on discipline. Some of these included engaging in sexual harassment, gender-based violence, and movement restrictions into male and female hostels. In addition, the teacher trainees also pointed out that they were rarely sensitized about the guidelines which were seen as rules that they had to simply abide by. Both teacher trainees and their tutors indicated that a common disciplinary action for breaking these rules was suspension or expulsion from the institution. Narratives from the teacher trainees and tutors also indicated that the guidance and counseling department was the body mandated to handle gender issues. The other guidelines alluded to by the respondents were those touching on equal gender representation in leadership positions and more so in the student council. Below are some of the sentiments from teacher trainees.

> *R1: If you walk around the canteen, it is written somewhere we don't condone gender-based violence or something like that…R2: So, some posts have been put just talking of gender-based violence and gender balance everywhere. There are guidelines that tend to prevent sexual harassment and any other intimidation for example if you are found doing sexual harassment like, let's say you are touching or, let's say, forcing yourself on a lady, that is direct expulsion, not suspension. And they once told us that they will write a letter to the education ministry and you will not be allowed to continue on with your course…FGD, Teacher trainees, Eregi*

> *R1: Yeah, there is a guideline that when you are vying for maybe the kitchen representative, there has to be a male and a female…R2: Okay, there is no express policy, but it is silently communicated. It is not written but is silently communicated. Whereby you are not supposed to interact in a way that shows carnal knowledge about each other. Yeah, I am not supposed to handle Sharon like my wife. We are supposed to handle each other like*

students. So, in school, students learn through observation, so as students observe our conduct, they are able to learn that this is what is supposed to be done and what is not to be done…FGD, Teacher trainees, Lugari

R4: It is there in the rules like there is a place I read, but I am not sure. It says if you are a male, you are not supposed to hit a girl. You'll be chased away when you hit her, and she reports you. That is gender violence…FGD, Teacher trainees, Shanzu

R2: The policies are there, and it's just that the post that was written was painted, but as you walk around our college, it was written there is no sexual harassment in our college, and there is a board that even said both genders are equal and should be treated equally. So I think the policies are there, and they are also being implemented in terms of leadership as we had said earlier that the leaders are both girls and boys. If a governor is a man and there is a governor who is a lady, and yes, the policies are there…FGD, Teacher trainees, Thogoto

The pre-service tutors also shared similar sentiments with teacher trainees, and this is what they said about the availability and their awareness of institutional policies on gender-based violence and sexual harassment

R: There are college rules and regulations if you don't abide by them normally we suspend our students. Normally they are not supposed to engage in love affairs issues when they are here. They are strictly for students, and like we have male hostels, we have female hostels the male hostels is out of bounds for female students, the female hostels are out of bounds for male students and there should be no dark cornering at night if you are found to be darkly cornering and you are two people of the opposite sex you have to be reported, and you have to go through the disciplinary committee and if you have to be… If it is found that you committed some offense, we normally suspend them for some time…Tutor Eregi

R: Well, okay, it is there because, for example, I am also in the guidance and counseling department at this college. So we always make sure that anything to do with sexual harassment is very minimal, if any. In fact, we even have some time to address our students on that on sexual harassment. It is not, okay, in this area, sometimes it is a challenge, but now having now continued to educate the students, it is coming down…Tutor Garissa

There were reports of the availability of gender committees in some of the teacher training institutions that are tasked with developing and reviewing institutional gender mainstreaming policies and guidelines. However, since the committee was not trained on gender issues, they did not feel well-equipped to carry out their tasks or implement the policies. For instance, the committee did not have mechanisms and information that could be relayed to the teacher trainees meaning that the set policies did not trickle down to the teacher trainees.

R: The setup here, at least, there are a few issues that would help them because having a gender committee exists, although for the gender committee, we have been there just maybe by name, but we have not been equipped. We are only two on the committee, but we have never been trained in handling gender issues. But we have been requesting to have such training because we now have the mandate, we can also pass the information to the teacher trainees. But we cannot reach them without the training and the necessary information. So, it has not been mainstreamed so well; although we came to the office, we took over from another committee, there was already a policy, a gender mainstreaming policy for the college, which we also reviewed because the time for review was up, and we did it. But now we lack that training. We don't have the right information that we can pass on to the teacher trainees...Tutor Kagumo

Just like pre-service teachers, in-service teachers highlighted that they were unaware of institutional policies on sexual harassment and gender-based violence. However, they reiterated that the issues were covered in school rules and regulations and that, as teachers, they were obligated to ensure that such practices did not take place in their institutions. According to the teachers, the knowledge about sexual harassment and gender-based violence was mainly emphasized during employment in the professional code of conduct and ethics. Narratives from the teachers also suggested that the guidelines or school rules on sexual harassment and gender-based violence were mostly directed to students with punitive measures for the same outlined.

R: Okay, I have not seen any policy, but in case of any harassment or conflict or anything, there is a way we handle it in terms of guidance and counseling. When maybe the issue is dense, we take it to the police...No, we don't have any policy...Teacher, Primary, Garissa

R: You know the policy will come in if at all there are frequent cases of sexual harassment, but I want to say we don't have such cases in our school of sexual harassment, but we cannot ignore that we are dealing with with adolescents...We don't have a policy we just try to inculcate ethics through rules and regulations that are imposed on the students, and we usually encourage what we call respect for each other...Teacher, Secondary, Garissa

R: Yes, I think through the school rules and regulations, we are able to tackle that. The school rules and regulations state clearly that you are not supposed to harass your fellow student in any way of course sexual harassment inclusive. Students who do that are punished by the school we have different modes of punishment, so that helps us to stop these cases...Teacher, Marsabit

R: It is not written, but for the teachers, we know we are responsible for those children we are the parents of those kids when we are here. So as for the outsiders, we don't allow the parents to come or the outsiders to come if they want to see the teacher they go to the office they, first of all, go to the office and say I want to see the teacher this and this. The non-

teaching staff are not supposed to interact directly with the learners, so if it is cooking, they just cook, and the teachers will serve…Teacher, Primary, Nairobi

On the other hand, there were teachers who reported that the institutional policies on sexual harassment and gender-based violence were available and that they were also aware of them. Some schools also reported that they induct teachers on these policies. In addition to the guideline and policies, some of the schools reported putting up reporting mechanisms to make reporting GBV and sexual harassment easier, such as assigning the guidance and counseling team to handle these cases and also assigning male and female teachers in the team to handle respective male and female learners. Some teachers also reported getting support from a non-governmental organization where teachers and learners are regularly imparted with knowledge and skills on the rights of children and life skills to help them evade child abuse.

> *R: We have well-spelled-out school rules on sexual harassment; there are written school rules pinned somewhere, which is very clear to the students. For example, for the boys, there is no inappropriate contact between the boys and the girls…Teacher, secondary, Marsabit*

> *R: We have the guiding and counseling team which deals with those issues. With girls who have a problem, she can report to the teachers concerned because all of us are not allowed; children might be shy, so we just chose a guiding and counseling team, and they deal with those…Ladies…we have a madam teacher, and then boys, we have a male teacher in guiding and counseling. So in case of any gender violence or any sexual harassment, we told them they could report there…Teacher, Primary, West Pokot*

> *R: We usually have training given to teachers almost fortnightly by the World Vision, and we have a teacher who is in charge of the child rights in school, who is me again, I am the one in charge of the child rights, and I usually have a meeting with the children once a week to educate them on their rites, and we also have a program in the school that helps to induct all children about their social life, and we train them on life skills, I am a teacher on life skills, and I train them on the skills on how to evade cases of girl child rape, or girl child abuse…Teacher, Primary, Busia*

> *R: I have also seen cases where… I think the school has been able to bring mentors from the Red Cross where they talk to the students, the female students, on issues of hygiene and sanitary issues and also the issue of GBV, so we do have talks especially help from the Red Cross. We get help from the Red Cross to ensure that the issue of discrimination does not affect us in this school…Teacher, Secondary, Garissa*

For schools that did not have their own guidelines or policies, the teacher professional code of conduct implemented by TSC was alluded to as a guideline to addressing issues on gender-based

violence and sexual harassment. According to them, the punitive measures stipulated in the code, such as deregistering teachers, were a key deterrent for teachers not engaging in such acts.

> *R: Fortunately, also, TSC teachers are people who are aged, so such things are not a very big issue. Even the BOM teachers, before we hire them, there is an orientation that we do the do's and don'ts, their jobs are at my fingertips your mess, and you know with the TSC at the moment whether you are employed by the TSC so long as the TSC registers you if you have carnal knowledge with a learner you can be deregistered even before you are employed…Teacher, Primary Nairobi*

> *R: There is no policy, but since there is a trained teacher, the TSC act guides you, that is, the rules and regulations that the TSC has given about the girl child, even the boys, because boys also face some challenges. So there is that TSC act. These are carnal knowledge. So as a teacher, as you have been trained, you know your area, and you know where to reach and where not to reach as you teach these girls…Teacher, Secondary, Samburu*

Although teachers highlighted that there were very few or no cases of gender-based violence and sexual abuse in their respective schools, they all agreed that they needed training on the same. They were especially concerned that they were not aware of the procedures to undertake in case of such incidences. They also pointed out that in the recent past, GBV and sexual harassment in schools have emerged as key issue in schools and, thus, the need for capacity building.

> *R: We need to be aware of gender violence. For some time, we only see it on television, and when it happens, especially with the procedures to be taken when it is in school and maybe outside the school, maybe in games, what should we do? Because sometimes it may get us off guard, this thing has happened, and we don't know the steps that should be taken. Is it to take straight ahead to the police, or there is another procedure we are supposed to take? And suppose it has happened to a girl, how should we encourage that girl to still have respect before other people, other students in school, in the village? The issue of stigma supposes it arises; how will that girl or the school or the family help the girl to deal with that stigma? Because surely, in this society we live in, if a girl is raped, it is a total stigma. Y…Teacher, Secondary, Tana River*

> *R: One, we need how we can be able, or we can be co-opted to help in the relationship between the pupils and the community. Because we know harassment may not happen in school, but it can also happen outside. So how are we going to be involved in such a case? Is there a policy that governs that? Because at times you will get maybe a child has been impregnated outside there, what steps can you take to get involved? Because sometimes you get involved, parents have talked amongst themselves, so you lack what to do. So if proper training or awareness will make us push for the same, it could be better…Teacher, Primary, West Pokot*

Further, most of the students in both primary and secondary schools also echoed that they were unaware of written institutional policies and guidelines for gender-based violence and sexual harassment. To them, gender-based violence and sexual harassment connoted avoiding relationships with the opposite gender. They also pointed out that issues of gender-based violence and sexual harassment were not prevalent in the respective schools.

> *R3:   There is nothing like that, but we are told that doing that is bad.*

> *R1:   But if we do that when the teacher sees us, he punishes us badly.*

> *R3:   Yes, R1 has said the truth if we do that, we will be punished greatly by being removed from school…FGD, Boys, Primary, Marsabit*

> *R3: When the teacher sees a boy and girl being friends… like there was one who was here and was sent home to bring the parent…I see how we are here in school you will find a boy in another class writing you a letter and bringing it to you and if you throw away the letter and when they find it the teacher asks you to bring your parents…FGD, Girls, Primary, Busia*

Both the QASOs and CSOs also reiterated that there were no written institutional policies on gender-based violence and sexual harassment in their respective institutions and were rather guided by the TSC code of conduct and civil servants' code of conduct. They also agreed with the sentiments raised by teachers that the TSC code of conduct was what was mainly used as a guideline on gender-based violence and sexual harassment at the school level.

> *R: In not straight away written somewhere that I can refer you to it somewhere in the noticeboard or somewhere in the file. But we know it is there. So, actually, they are those things, you know, I know there is this policy, so I cannot do that, you should not do that. But now reference, the evidence is the issue now. I don't have the evidence to tell you that it is documented here; this meeting was held to discuss the same. That is what is lacking…QASO, Tana River*

> *R: There is none, I think there is none that has been written down, but so far, we have never had any harassment from our colleagues or our workers. I have never heard of, here we have male and females colleagues working together, brought together by that code of working together, and we have never had any of them. We normally take tea together, we normally go to the field together, we have never heard any harassment…QASO, Garissa*

> *R: Yes. These teachers do understand this because we have the legal documents that explain clearly this harassment, sexual harassment. It is there in the Teacher's Act and TSC Act; it is also their ethics and values. So, teachers understand sexual harassment, and therefore, they are practicing not being involved in such kinds of issues. So, they do*

understand because they have these policies and are reading them every time, and they now understand it…CSO, Samburu

According to the QASOs and CSOs, despite there not being a written policy, schools and especially those with boarding schools, had put up strategies to minimize cases of gender-based violence and sexual harassment, such as separating male and female toilets and dormitory facilities, assigning matrons to supervise students' in dormitories, having a teacher on duty in the evenings.

R: Yes, I think the ministry has been so much in that, and I believe now every school has those policies, for example in boarding schools, you find that girls' dormitories are far away from the boys' dormitories, and the girls' dormitories have a matron who take care of the girls and even the watchman, then activities that are being done maybe like odd hours like in the evening like 7,8,9,10 pm the teacher on duty has to be there to make sure that they safeguard both sexes boys are taken care of, and girls are taken care or so that nothing happens in between there..CSO, Turkana

Just like teachers, the QASOs and CSOs agreed that training on gender-based violence and sexual harassment was needed to not only build their own capacity to handle the cases if they arise but also support and build the capacity of teachers, students, and colleagues in their respective Counties. According to them, this was especially important considering that not all teachers were employed by the TSC, meaning they were unaware of the code of conduct.

R: It is needed like yesterday. Because we need those skills, to be equipped with those skills so that we can cascade them. We need to know exactly the scope of our operation on those issues. We need to be sensitized on the gender policy itself, and we get it so that we can also read it and see the details about it. And then once we get it, we also need to be supported to train others, our clients in terms of the schools…QASO, Tana River

R: We want a training because maybe those officers who I am working with do not know how to, or maybe I'd be transferred and those who would remain there will have that kind of knowledge, maybe it will prevent them from those others who would come and bring those kinds of problems, and they will secure that matter in the office with the personnel…QASO, Turkana

R: Sexual harassment, they need training and support because the teacher needs capacity building on sexual harassment because there are some who are not even aware or they don't read the TSC code of conduct, and they don't know the offenses that they will encounter when they do such an act…CSO, Wajir

R: We need support and training because of sexual harassment there are some of our members of society normally they might cause sexual harassment, so to handle those issues that may arise, we need the issues of sexual harassment to be at our tips through we have

99

learned earlier we need to be reminded so that we are retold how to handle sexual harassment in case they happen in our locality…QASO, Wajir.

5.3.4 Gender inclusive schools facilities

We examined the availability of various school facilities and the extent to which the facilities were gender inclusive. We explored if schools had school libraries and whether the libraries were demarcated for separate use by boys and girls. The findings indicated that 50 percent of private primary schools and 65 percent of private secondary schools had school libraries. Contrastingly, only 16% of public primary and 35% of public secondary schools had school libraries. This is an indication the majority of the schools were under-resourced therefore lacking important facilities to support learning and skills building It was beyond the scope of the present study to examine how well the available libraries were equipped.

5.3.5 Reading areas/libraries

An examination of the whether the schools in the target counties hard designated reading areas or libraries found that in general, 50% and 65% of private primary and secondary schools compared 15.7% and 34.6% of public primary and secondary schools respectively had a designated reading area. Public primary schools in Tana River, Turkana and Wajir had no designated reading areas as shown on Table 15.

Table 15: Percentage of Schools with designated reading areas/library by school types

	Primary		Secondary	
	Public	**Private**	**Public**	**Private**
Busia	23.1	100.0	63.6	100.0
Garissa	12.5	25.0	66.7	42.9
Mandera	12.5	33.3	21.4	
Marsabit	10.0	0.0	50.0	100.0
Nairobi	75.0	62.5	33.3	71.4
Samburu	36.4	100.0	27.3	100.0
Tana River	0.0		18.2	0.0
Turkana	0.0	100.0	16.7	100.0
Wajir	0.0	50.0	45.5	

West Pokot	23.1	100.0	25.0	
Total	**15.7**	**50.0**	**34.6**	**65.0**

A further examination of whether mixed gender schools separated the reading spaces for boys and girls indicated that generally, 93 percent of institutions at the primary school level and 96 percent at the secondary level reported that the reading areas were mixed for both male and female students see Figure 23. Very few schools indicated that very few schools had separate reading spaces. This was mainly evident in predominantly Islamic regions where school programming activities were separated by gender because of religious beliefs and practices. The numbers were too few to separate by type of school.
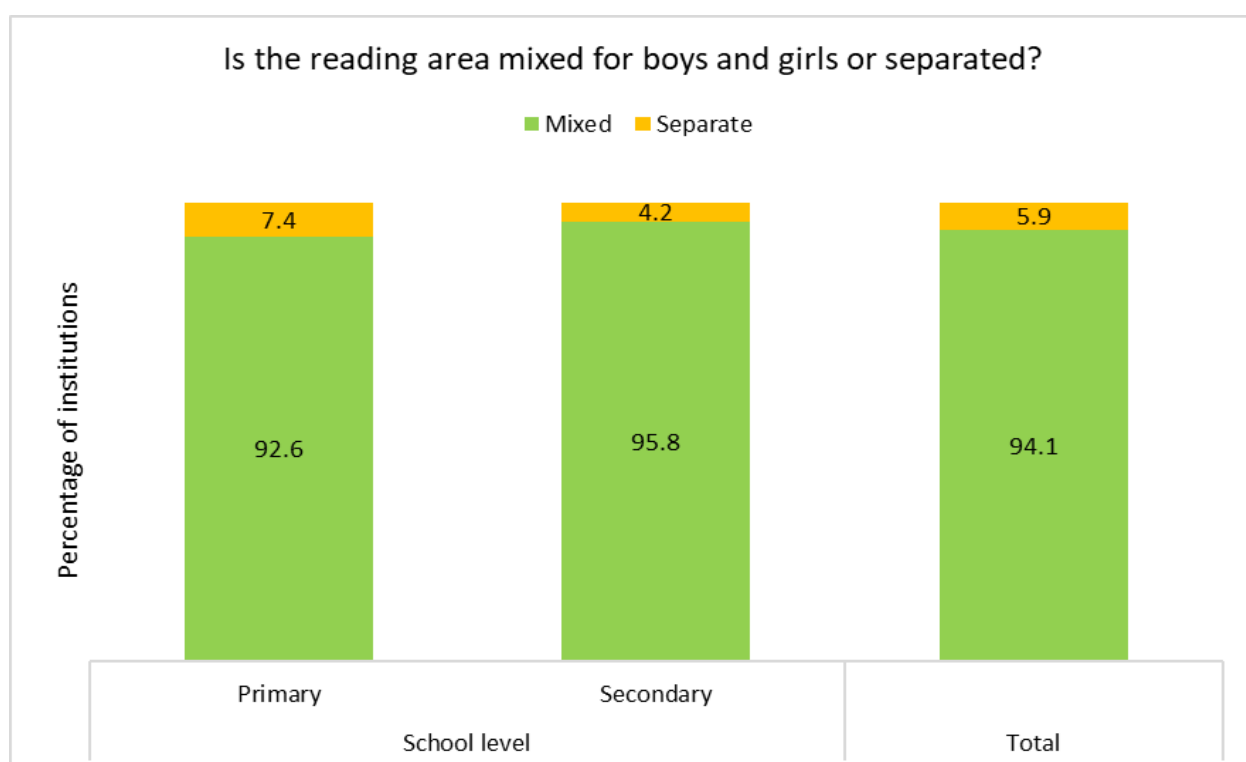

Figure 23: Status of the reading areas for the schools that have designated reading areas (libraries)

5.3.6 Gender inclusive toilet facilities

All the public primary schools in the sample indicated that they had toilet facilities except one in Wajir County. Figure 24 highlights the different types of toilets that were available in the schools included in the study. A majority of primary schools had improved pit latrine toilet facilities - public 47 and private schools 42 percent. Similarly, 49 percent of public schools and 29 percent of private schools had traditional pit latrines. Only 5 percent of public primary schools had flush toilets compared to 29 percent of private schools. At the secondary level, a majority of public schools (55 percent) had improved line latrines as compared to 20 percent of private schools. In

addition, 36 percent of public and 25 percent of private secondary schools had traditional pit latrines. Fifty-five percent of private schools, that is 55 percent, had flush toilets as compared to 7 percent of public schools.
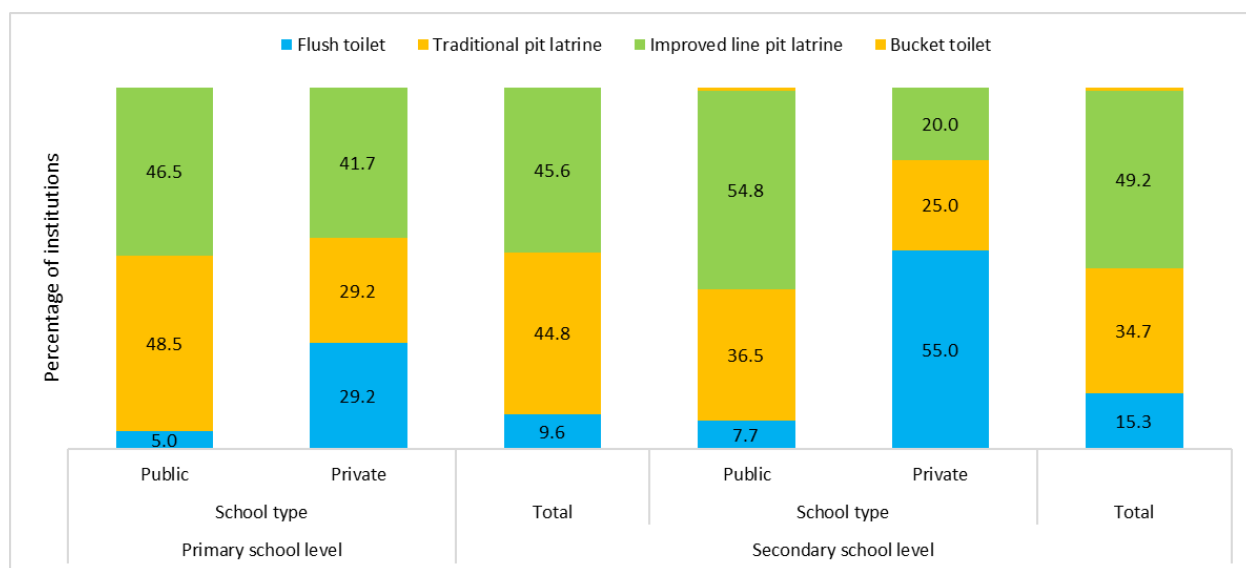

Figure 24: The type of toilets used in primary and secondary schools

From Table 16, a total of 98 percent of the primary schools reported having toilets for boys in the school compound while all secondary schools reported having toilets for boys in the school compound. At the primary level, 99 percent of the schools reported having toilets for girls within the school compound, while all secondary schools reported having toilets for girls within the school compound.

Table 16: Percentage of schools with boys and girls toilets located within the school's compound

	Boys			**Girls**		
	Primary		Secondary	Primary		Secondary
	No	Yes	Yes	No	Yes	Yes
Mixed-gender	2	98	100	1	99	100
Boys only			100			
Girls only					100	100

We noted positive findings with regards to the number of toilet door stances for both private and public primary schools. Over 98 percent of the schools had separate toilets stances for male and female students. All the secondary schools had separate door stances for male and female students.

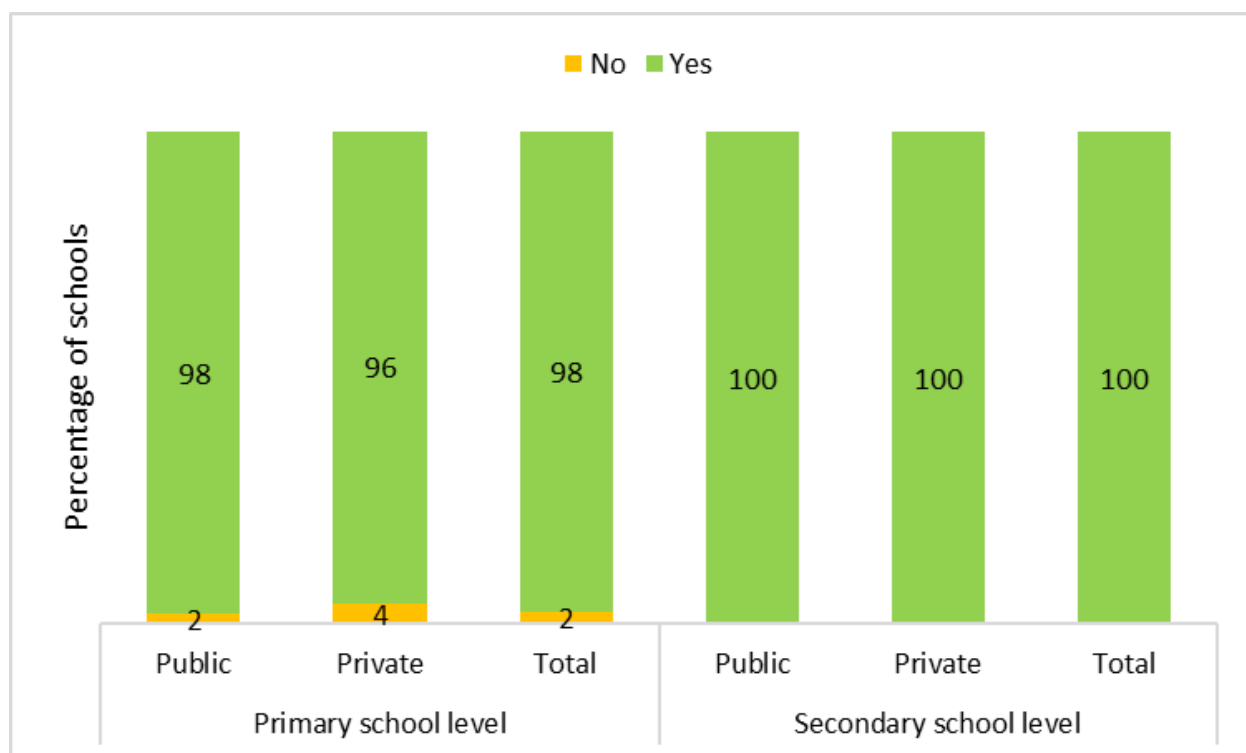**Gender and Education: Evaluating Gender Mainstreaming Practices in Curriculum Implementation in Kenya**

Figure 25: Percentage of schools with toilets with separate doors/stances

Despite the majority of the primary schools reporting that they had separate toilets for teachers and learners, the number was higher in public schools as compared to private schools at 95 percent and 88 percent, respectively. A smaller percentage, 3 percent of public schools, also reported that they did not have toilets for teachers or that the toilets were located outside the school compound. At the Secondary school level, 99 percent of public schools and 95 percent of private schools reported having separate toilets for teachers and students.

Table 17: Are there toilet facilities used by teachers and staff only/exclusively?

	Primary school level			Secondary school level		
	Public	**Private**	**Total**	**Public**	**Private**	**Total**
Yes	95.1	87.5	93.6	99.0	95.0	98.4
Shared with learners	2.0	12.5	4.0	1.0	5.0	1.6

No toilets for teachers/ located outside school compound	3.0	0.0	2.4			

Figure 26 highlights the number of schools both at the primary and secondary levels that reported having separate toilet stances for learners with special needs. 46 percent of primary public schools did not have separate toilets for learners with special needs. 44% of the schools indicate that they did not have learners with special needs hence they did not have separate toilets for them. As for the private schools, a majority of 67 percent reported not having learners with special needs while 33 percent reported not having separate toilets for students with special needs. At the Secondary school level, 54 percent of public schools indicated that they did not have learners with special needs, and 39 percent indicated that they did not have separate toilets. The majority of private schools either did not have students with special needs or did not have separate toilets for them at 65 and 30 percent, respectively.
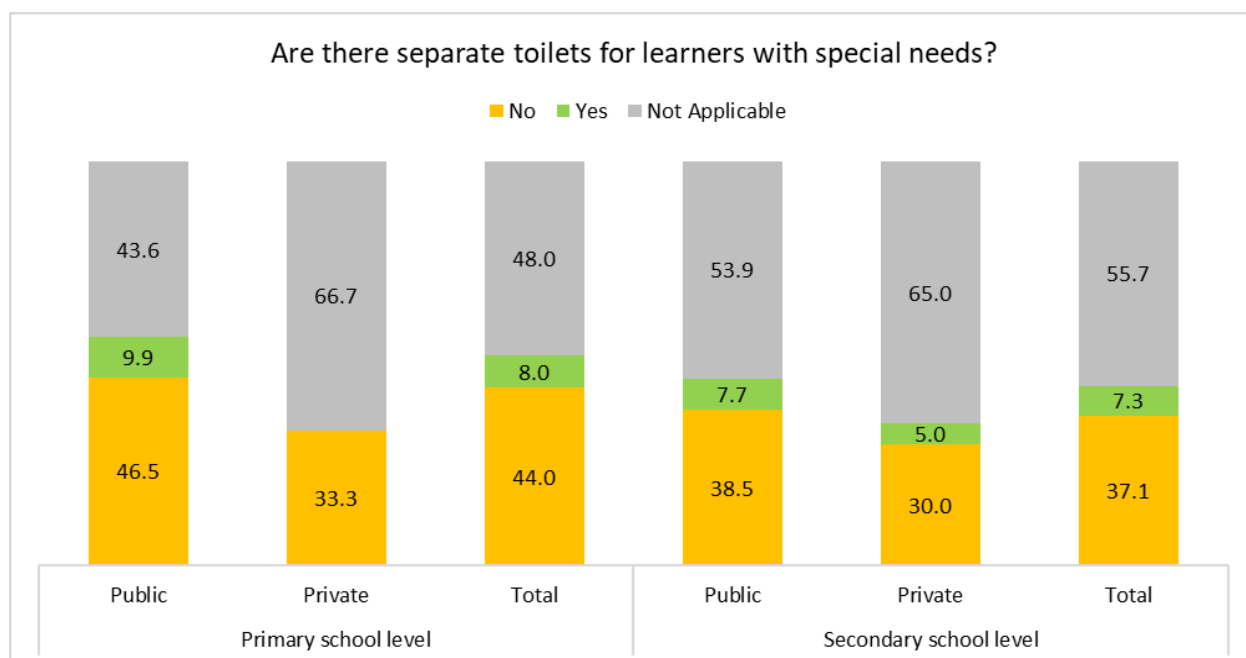

Figure 26: Are there separate toilets for learners with special needs?

5.3.7 Pupil-toilet ratio

The World Health Organization recommends a pupil-toilet ratio of 1:50 for boys and 1:25 toilets for girls (Adams et al., 2009). We asked the respondents to inform us about the number of toilets/stances they had for boys and for girls in their schools, we then utilized this information against the student enrolment to compute the pupil-toilet ratios. Firstly, considering all schools, the results indicated the Pupil-toilet ratio for boys in primary school was 1:46 and in a secondary school 1:54, whereas, for girls at the primary school level, it was 1:40 and in secondary school level it was 1:48, respectively. Secondly, considering the mixed gender schools only, the pupil-

toilet ratio for boys in primary schools was 1:46 and for secondary schools level was 1:29. On the other hand, the pupil-toilet ratio for girls at primary school level was 1:37 and for the secondary level at 1:23.

5.3.8 Main source of water for the school

Figure 27 above shows that the main source of drinking water for schools was piped water, followed by boreholes. Most schools indicated that they bought water from boozers as the third source.
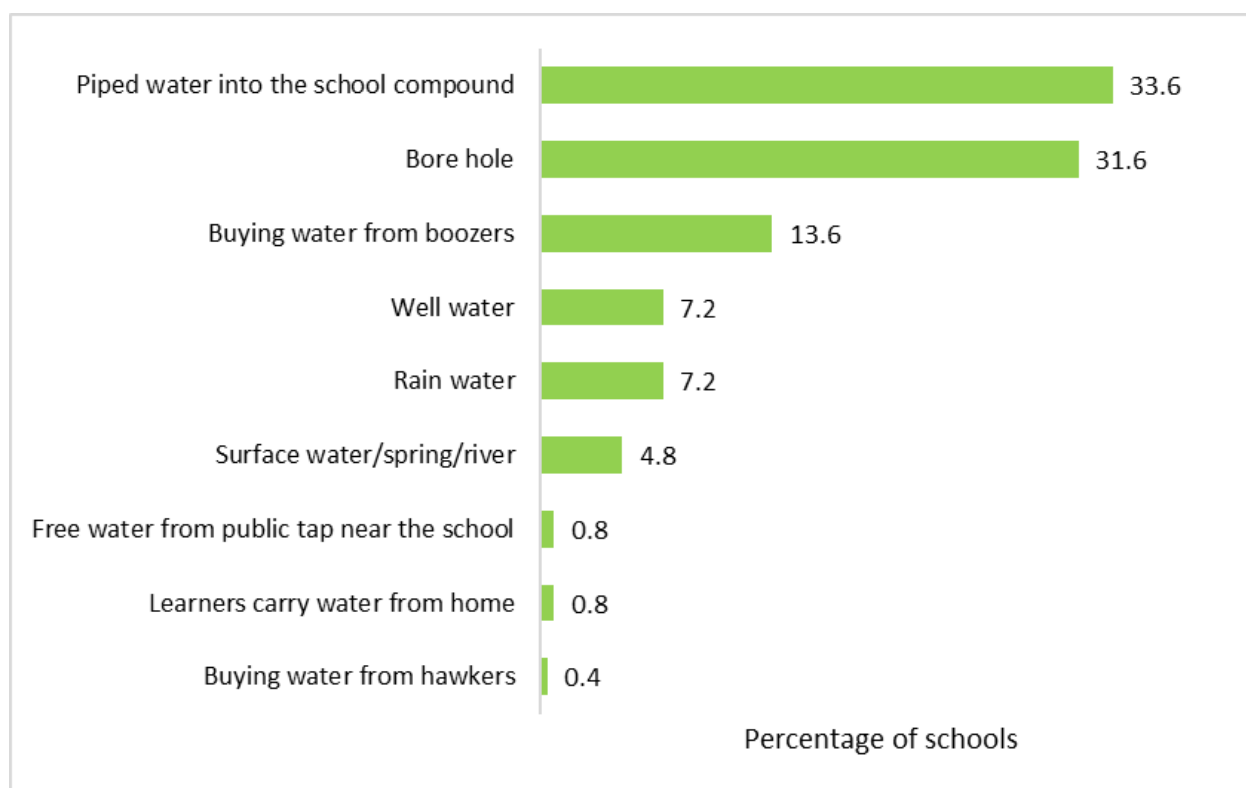

Figure 27: Main source of water

5.3.9 Gender inclusive handwashing points

The study sought to find out how many handwashing points/taps are available for male and female students. The analysis in Table 16 provides the percentages for mixed-gender schools. The percentages were computed as a proportion of the total number of handwashing points. The analysis indicated that the majority of mixed-gender public and private schools provide handwashing points that have not been separated by gender or SNE giving an overall percentage of 69.2% of the total number of handwashing points. For the SNE students, only 0.1% of handwashing points are attributed to boys or girls in public schools and 0% in private schools,

however, for combined gender SNE students public schools indicated a percentage of 3.3% while private had only 1.9% dedicated for SNE learners.

Table 18: The percentage of handwashing points for mixed gender schools out of the total number of handwashing points

	Male students	**Female students**	**Male students with SNE**	**Female students with SNE**	**For all students**	**For all students SNE**
Public	13.7%	13.1%	0.1%	0.1%	69.7%	3.3%
Private	16.6%	14.1%	0.0%	0.0%	67.4%	1.9%
Total	14.4%	13.3%	0.1%	0.1%	69.2%	3.0%

5.3.10 Gender inclusive playground facilities

More than half of the mixed-gender primary and secondary schools had playgrounds. The number of public primary schools reported a higher number of playgrounds compared to the private schools at 90% and 75% respectively. A similar observation was made for secondary public schools at 86% and 65% of private schools.
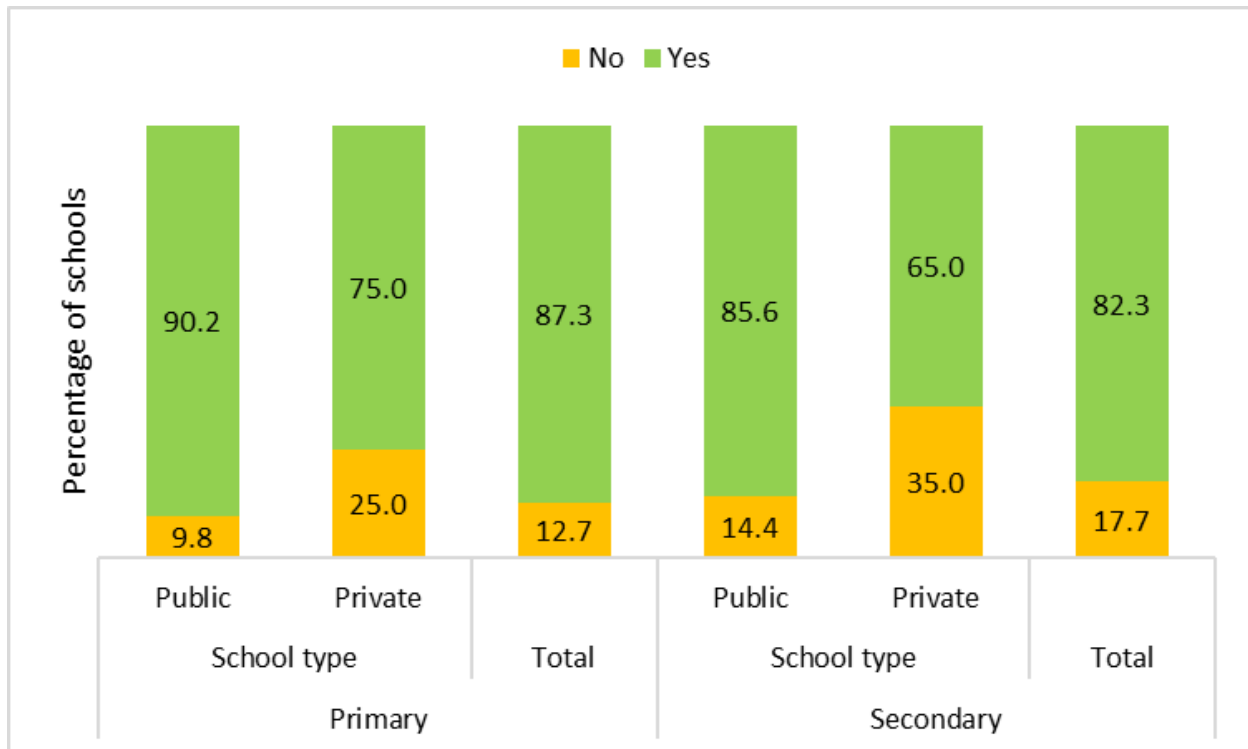
Figure 28: Availability of a playing ground exclusive for learners in the school

We examined the nature of field occupancy within the schools. Generally, it was reported that boys in both private and public schools took up more space in the playground in the mixed gender schools at 58 and 66 percent at both primary and secondary schools respectively.
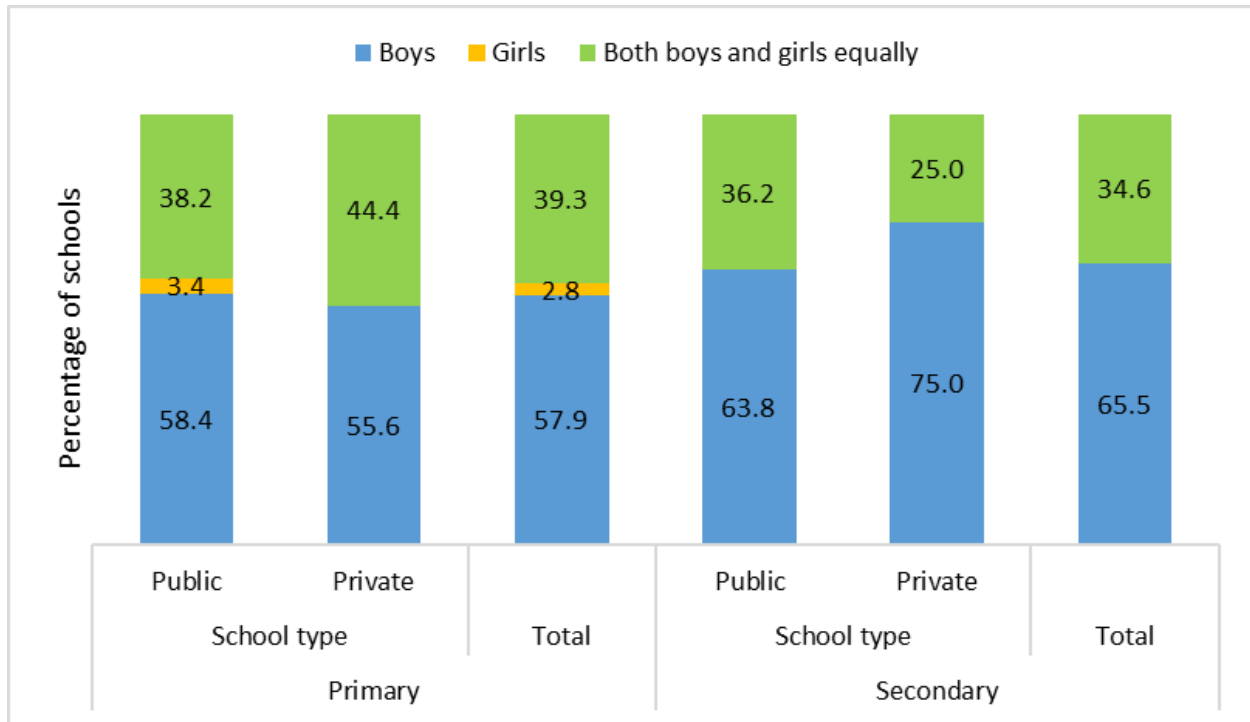
Figure 29: Who takes up most of the space in the playground - mixed gender schools only?

5.3.11 Staffing by gender

We examined the proportions of teaching staff by gender. Figure 34 shows that the teaching staff at the pre-primary level was predominantly female at 82 percent. However, there were more male teachers at the primary and secondary levels, 54 and 75 percent, respectively.
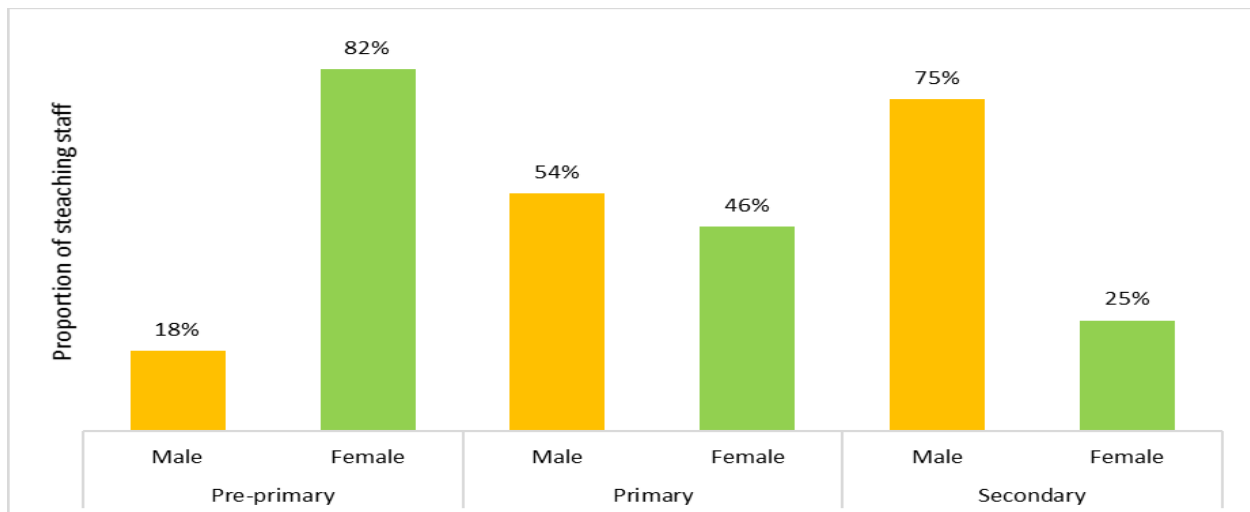

Figure 30: Proportion of male and female teaching staff by levels

5.3.12 Teacher's qualification by school levels

We further examined the teacher qualifications. The results indicated that most pre-primary and primary school teachers had certificate levels with an equal representation of male and female teachers at the pre-primary level at 63 percent. The number of female teachers, however, was slightly higher at 61 percent as compared to their male counterparts at 58 percent. At the Secondary school level, the majority of the teachers, both male and female had bachelor's degrees at 80 and 85 percent respectively.
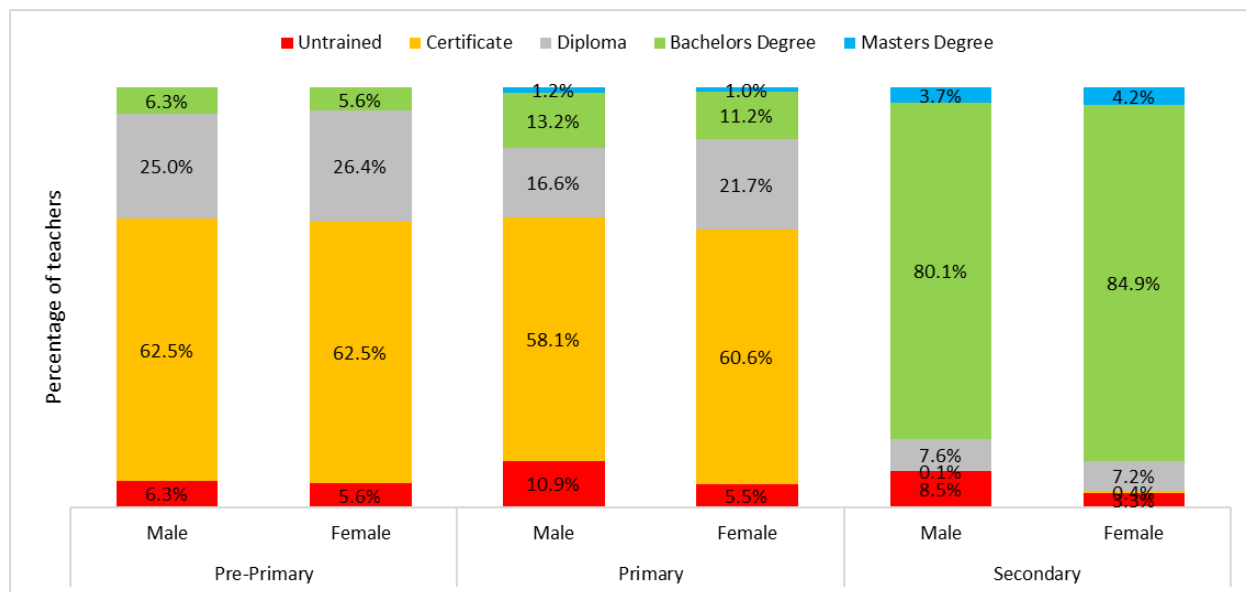
Figure 31: Teacher's education levels (by percentage)

5.3.13 Gender inclusive school management

In total, about 90 percent of schools at the primary level had a duly appointed BOM, with private schools scoring lower at 62 percent as compared to public schools at 97 percent. At the Secondary level, all public schools had duly appointed BOMs, while only 45 percent of private schools had duly elected BOMs. On the other hand, about 74 percent of the primary schools had duly elected Parents Associations, with public schools scoring higher at 78 percent compared to 54 percent in private schools. About 82 percent of secondary schools had parent associations with public schools reporting 90 percent compared to 35 percent for private schools.
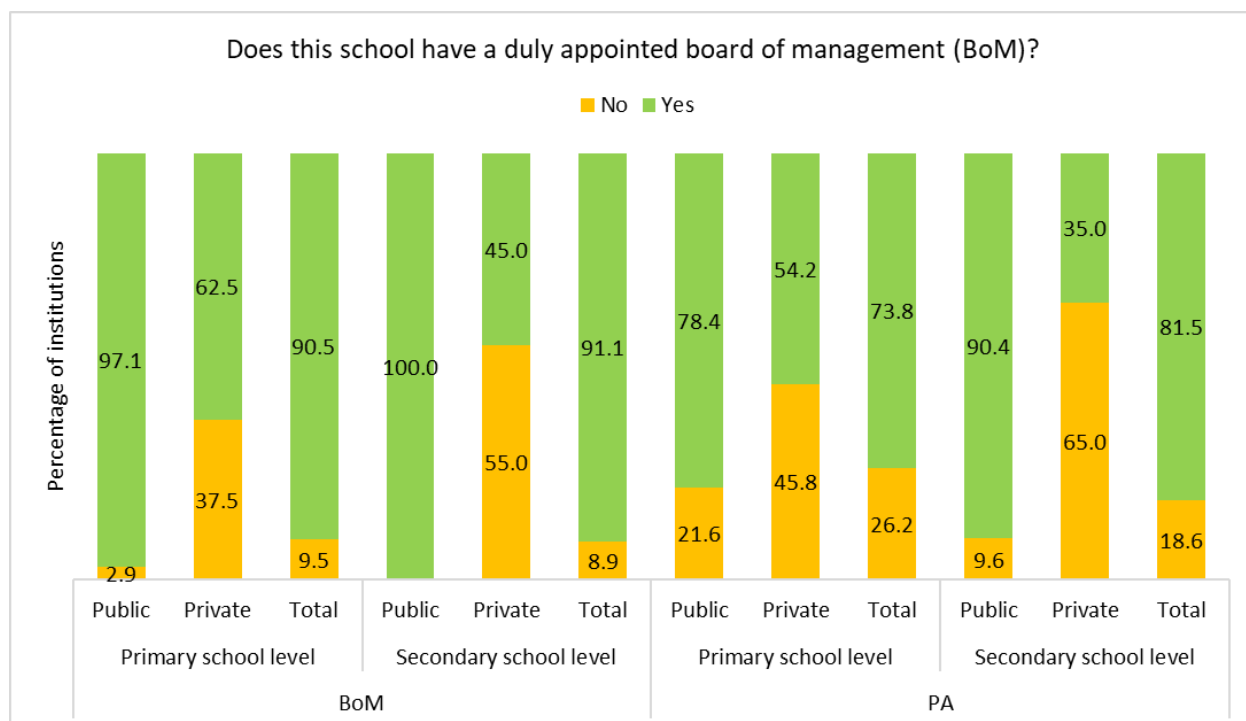
Figure 32: Duly appointed Boards of Management (BOMs)

In terms of gender representation, there were more male members of the school Boards of Management as compared to female members at the primary and secondary levels in public and private schools. At the Primary level, the representation of men was 64 percent, while at the secondary level, the percentage of men was 68 percent. Figure 33 also shows that there was a higher representation of male members in the Parent's Associations as compared to their female counterparts for both public and private schools. At the primary school level, the percentage of men was higher at 60 percent, while at the secondary level, 61 percent of the members were male.

Figure 33: Representation of male and female BOM/PA members

Gender and Education: Evaluating Gender Mainstreaming Practices in Curriculum Implementation in Kenya

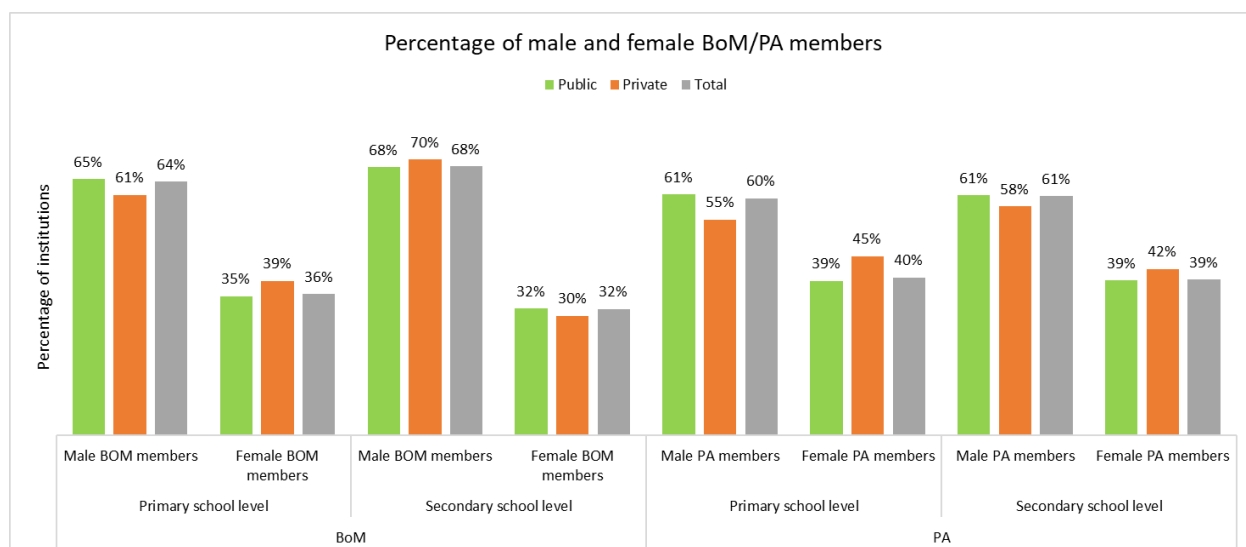Additionally, about 58 percent of the public primary schools did not train their BOMs on how to mainstream gender issues, with the percentage reported being slightly higher in private schools at 60 percent. The trend was higher in secondary schools at about 73 percent on average, with private schools scoring higher at 78 percent as compared to 72 percent in public schools. As for the parent associations, about 73 percent of public primary schools and 69 percent of private schools reported that their members were not trained on mainstreaming gender issues. At the Secondary school level, about 79 percent of public schools and 86 percent of private schools reported not having trained the PAs as highlighted in Figure 34.
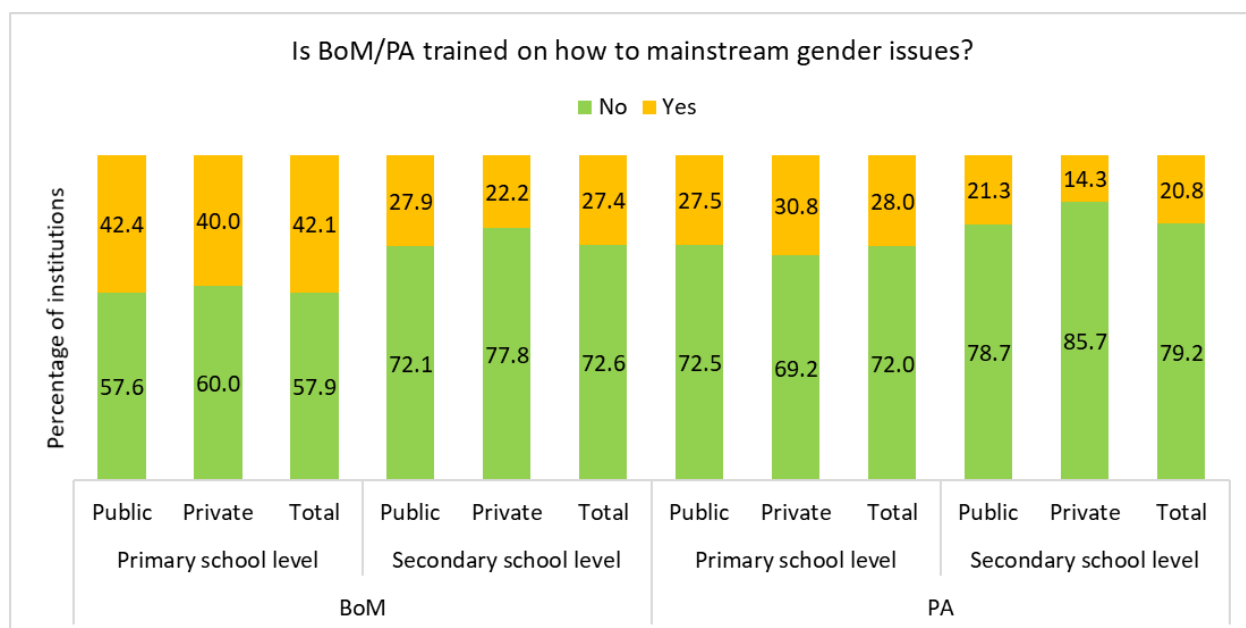
Figure 34: Are the BOMs/PAs trained on gender issues?

Figure 35 shows that 70 percent and 73 percent of the BOMs in public and private primary schools respectively discussed gender issues that affect students and teachers. On the other hand, less than 50 percent of Parents Associations (PAs) at the primary level discussed gender issues in both public and private schools. At the secondary school level, 63 percent of public schools reported discussing gender issues in their BoM meetings compared to 44 percent of private schools. On the other hand, half of the PAs in public secondary schools and 30 percent in private schools discussed gender issues.
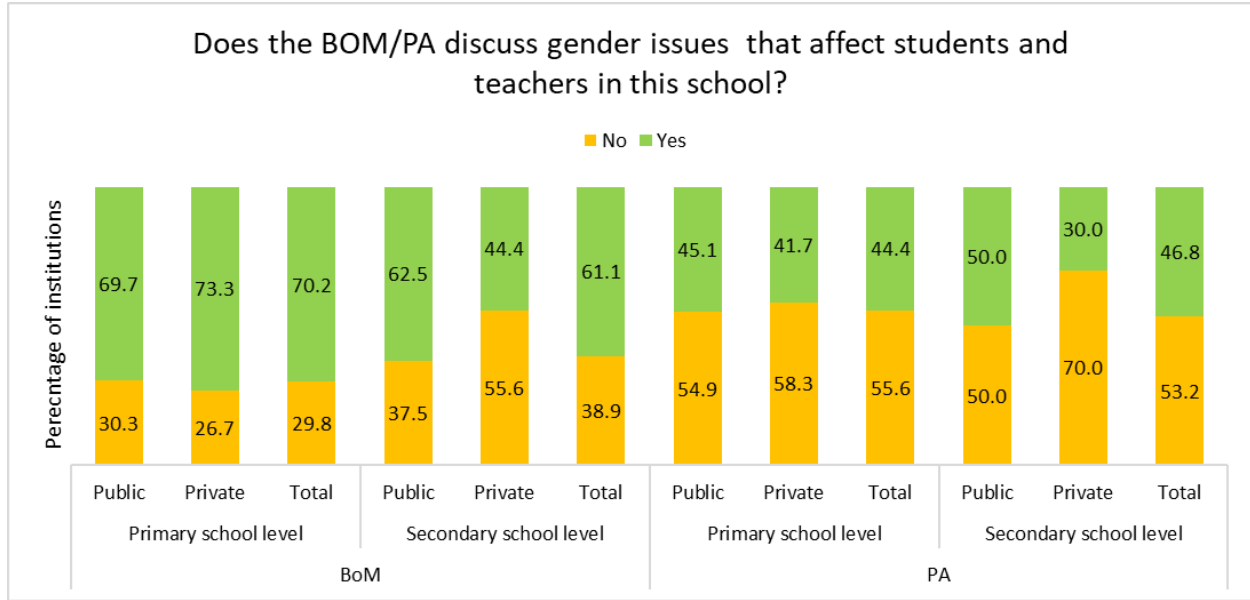
Figure 35: Discussions on gender issues by BOMs and PAs

5.3.14 Gender inclusive school leadership

In terms of school leadership, there were more male head teachers in primary schools than their female counterparts in both private and public schools at 80 percent and 85 percent, respectively, as indicated in Figure 40. There were also more male Heads of Department (HoD) in Maths at 80 percent in both public and private schools. However, there are more female HODs in languages in public schools at 56 percent, while in private schools, there were more male HODs in languages than females at 55 percent. Furthermore, about 59 and 56 percent of the HODs in humanities were male in both private and public schools, respectively. The trend was the same for sciences, with 67 percent of male HODs in public schools and 80 percent in private schools.
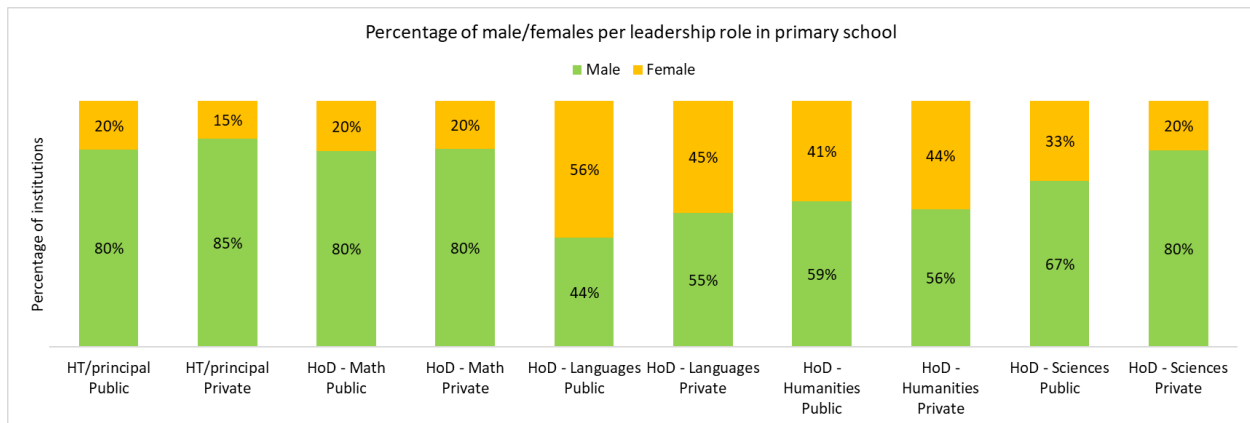
Figure 36: Male and female representatives in leadership roles at the Primary level

At the secondary school level, there was more male than female principals in private and public secondary schools at 78 percent and 95 percent respectively. Additionally, more male teachers were HODs in Maths than their female counterparts at 66 percent in public schools and 85 percent in private schools. The trend was the same for languages, humanities, and sciences, where the

majority of the HODs were male as shown in Figure *37*.
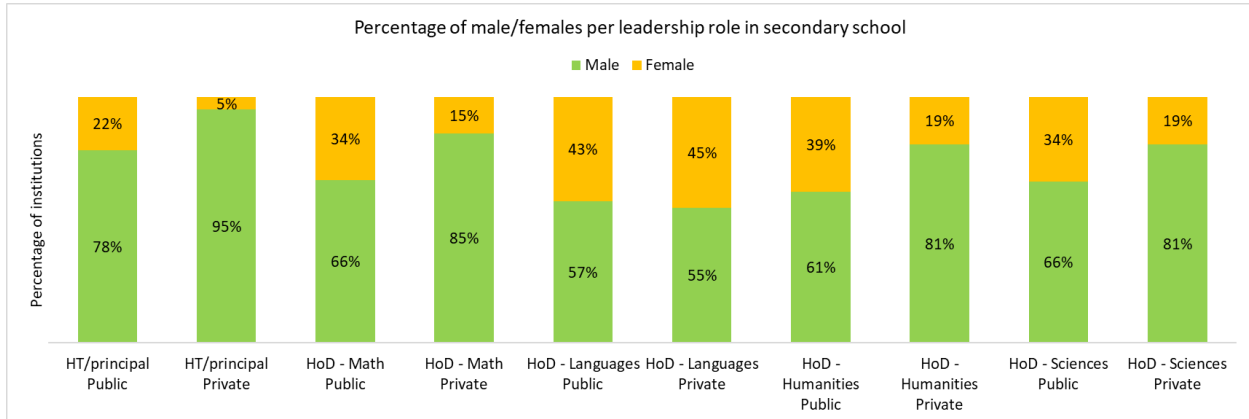
Figure 37: Male and female representatives in leadership roles at the Secondary level

As highlighted in Figure 38, there were more boys than girls in leadership roles in both primary and secondary mixed gender schools. At the primary level, the percentage of girls was slightly lower at 49 percent as compared to 51 percent for boys while at the Secondary level, the percentage was reported to be 48 percent for girls as compared to 52 percent for boys.
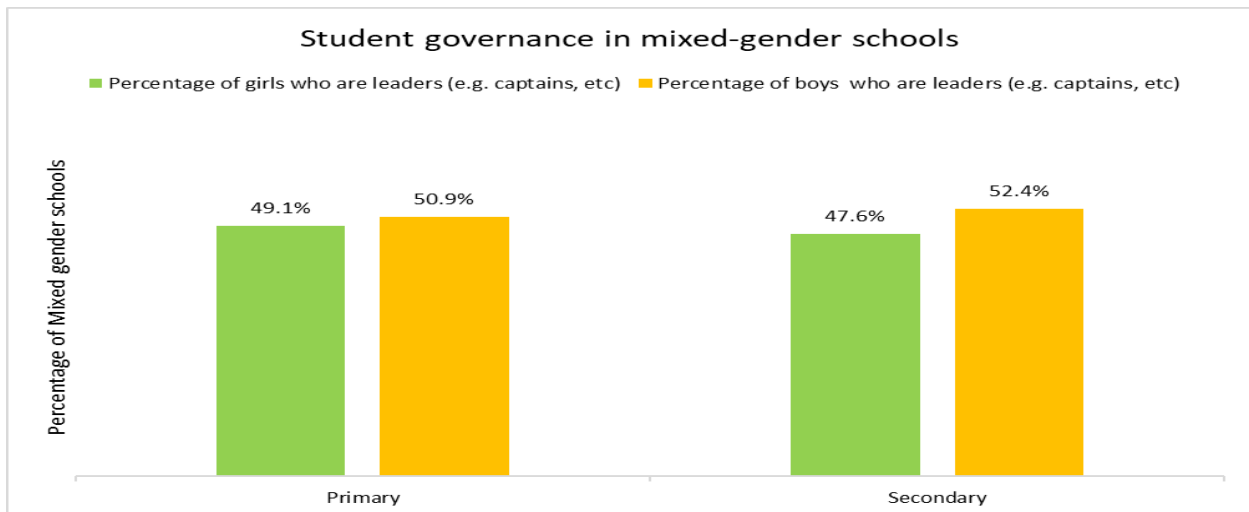
Figure 38: Student leadership in mixed schools in primary and secondary schools

5.3.15 Gender inclusive school supervisory mechanisms

We further examined the practices of quality assurance and standards officers (QASO) at the school level and how often the schools were inspected. From Figure 39, more private primary (17%) and secondary (20%) schools compared public primary (6%) and secondary (7%) schools reported never being visited by QASOs. On the other hand more public primary (24%) compared to private (4%) schools reported not being visited by a public health officer (PHO) with a relatively similar percentage of public (23%) and private (25%) secondary schools reporting the same.
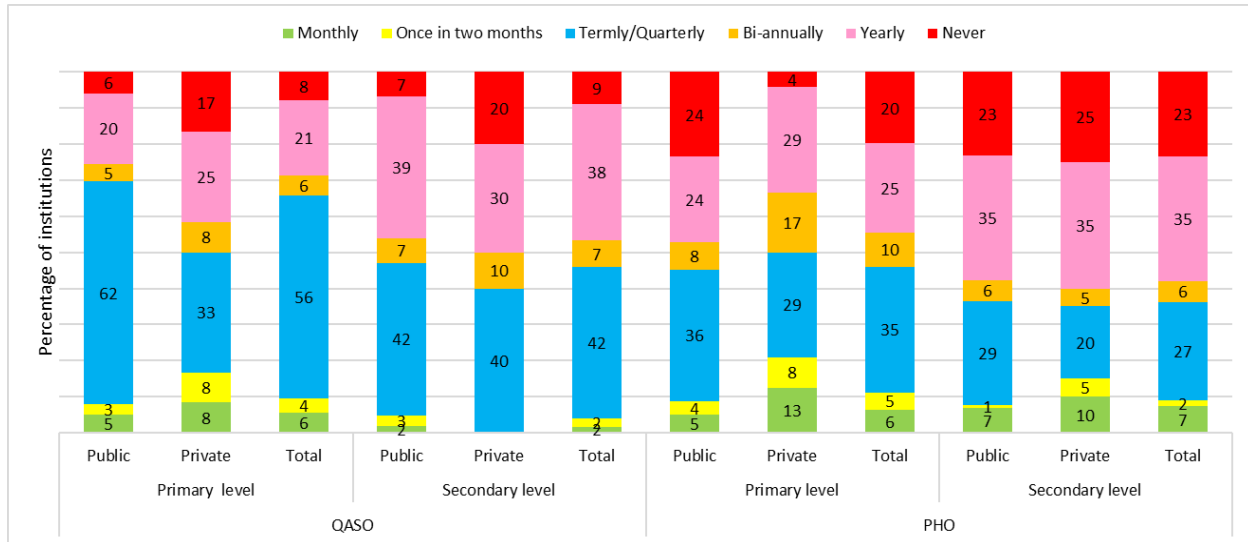
Figure 39: Since the beginning of 2021 how often did a QASO/PHO visit this school?

A further examination revealed that 60% and 47% of primary and secondary schools respectively reported that QASOs addressed gender mainstreaming issues during school visits. On the other hand fewer schools reported that PHOs addressed issues of gender mainstreaming, at 37% and 22% for primary and secondary schools respectively as shown on Figure 40.
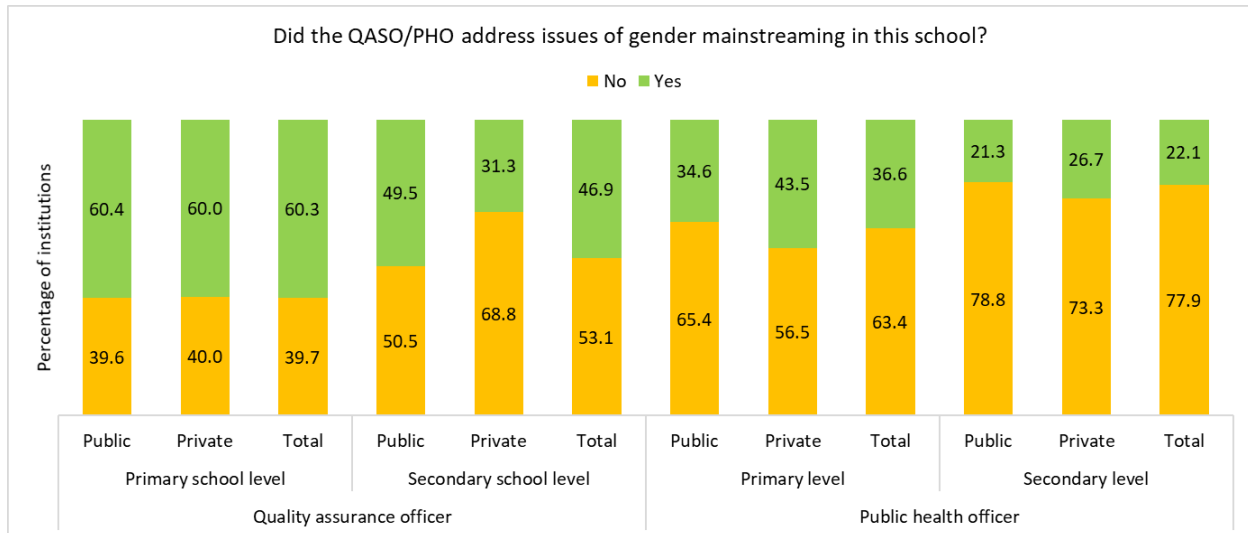
Figure 40: Gender mainstreaming aspects during QASO and PHO inspections

5.3.16 Gender inclusive school development plans

On average, about 34 percent of primary schools reported having and were able to show the school development plans during data collection, with only 4 percent of private primary schools reporting availability and showing their development plan. About 43 percent of the primary schools reported having but could not show the plans to the research team. When categorized by type of schools, the majority of private schools did not have a development plan at 42 percent compared to 19 percent of public schools. On the other hand, 50 percent of private secondary schools did not have development plans compared to 23 percent of public schools.
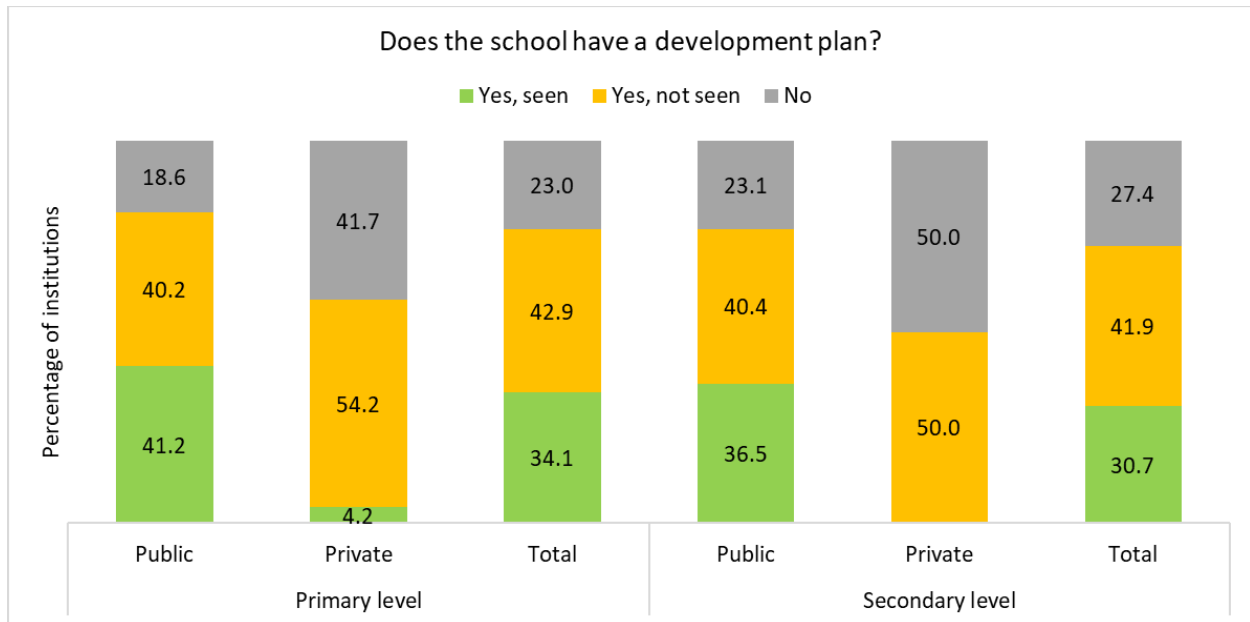
Figure 41: Availability of school development plans

Of the institutions that had the development plans readily available, as shown in Figure 42, 81 percent of public primary schools reported that the plans addressed gender issues. On the other hand, all private primary schools reported that their plans did not address gender issues. At the Secondary level, 66 percent of public schools reported that the plans addressed gender issues.
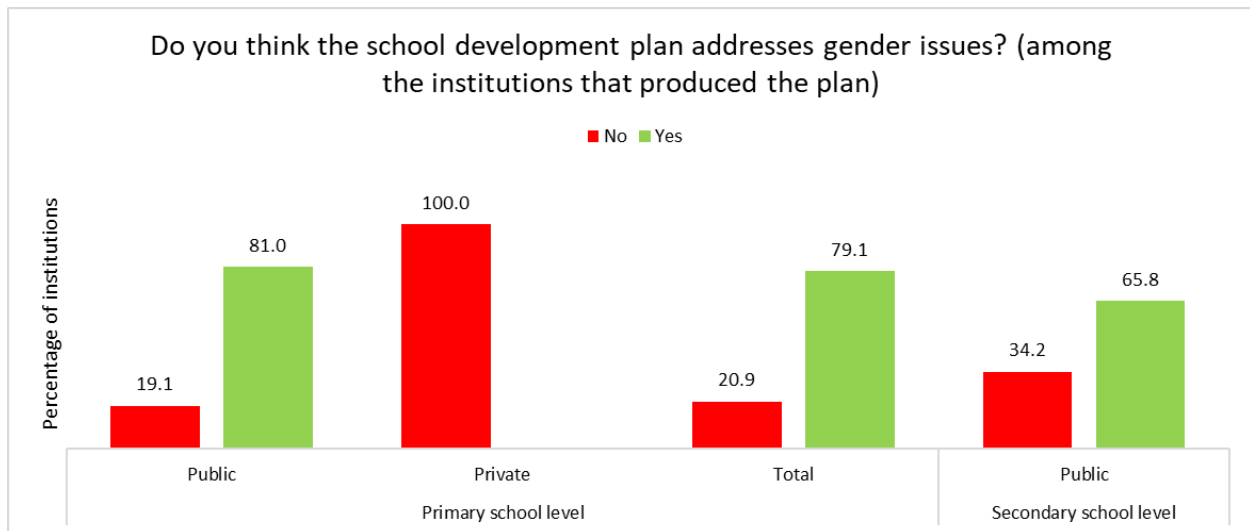
Figure 42: Does the school development plan address gender issues

5.3.17 Special Needs Education

a. Enrollment of SNE learners

Only 7 of the 126 primary schools reported enrolling students with SNE. There were only 21 students (8 boys and 13 girls) with special needs enrolled in primary school. There were no SNE students at pre-primary and secondary school levels as shown in Table 19.

Table 19: Number of SNE students enrolled in the study schools

	#Classes	Frequency	#SNE boys	#SNE girls
Pre Primary	1	1		
Primary	1	2	8	13
	6	1		
Secondary	1	1	0	0

b. Availability of SNE facilities

The study also examined facilities put up in place in the study schools to support learners with special needs, see Figure 43. For instance, regarding ramps, the proportion of secondary schools was however higher at 47 percent than that of primary schools at 38 percent. In addition, 34 percent of secondary schools and 27 percent of primary schools reported having wide doors and window openings. Furthermore, a proportion of 9 percent of schools overall reported having designated toilets for learners with special needs.

Gender and Education: Evaluating Gender Mainstreaming Practices in Curriculum Implementation in Kenya
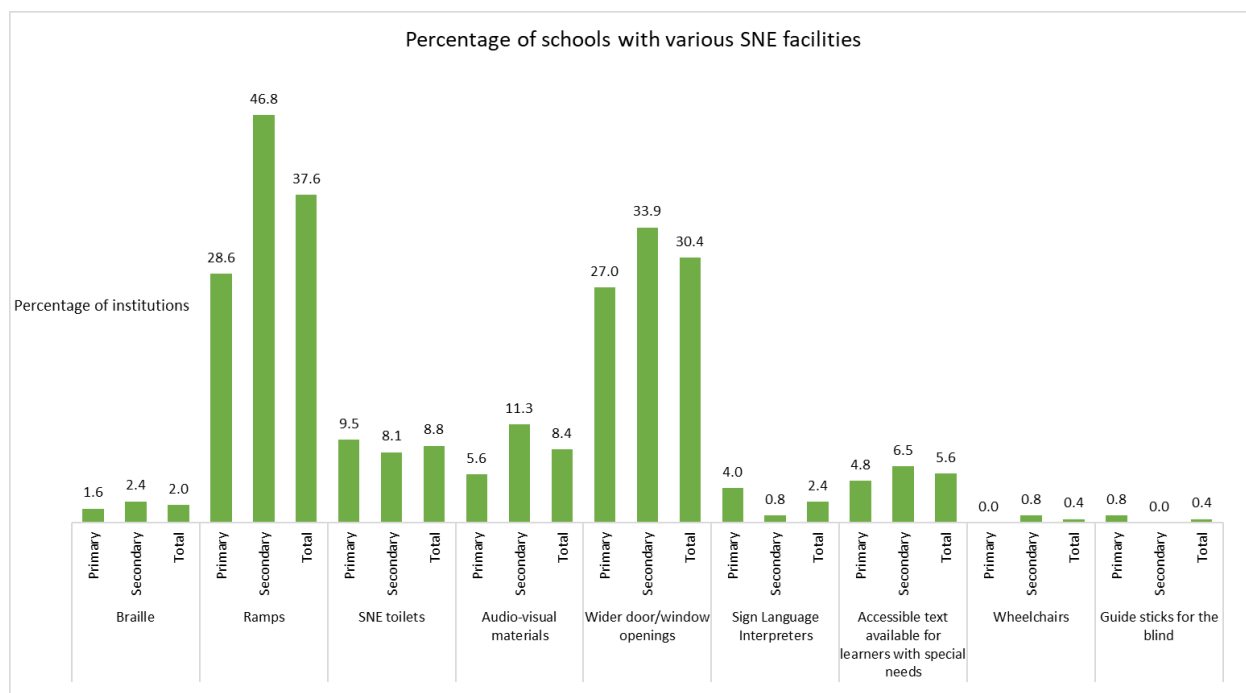
Figure 43: Percentage of schools that possess various SNE-related facilities

c. Gender differences in how SNE learners are accommodated in school

Most of the primary and secondary schools that reported having female learners with special needs, indicated that they had mechanisms in place to accommodate these learners. Of these strategies, mainstreaming of students within the regular school setup was ranked first, followed by the availability of ramps for learners with physical disabilities and thirdly having teachers who are trained to handle learners with special needs. At the Primary school level, three mechanisms scored highly as compared to the secondary school level at 39 versus 27 percent, 13 versus 12 percent, and 7 versus 1 percent respectively.

Gender and Education: Evaluating Gender Mainstreaming Practices in Curriculum Implementation in Kenya

How SNE girls are accomodated

Category	Secondary	Primary
Mainstreamed/integrated	27	39
Ramps for use by learners with physical disabilities	12	13
Special education teachers are available in school	1	7
Special education caregivers	1	2
Wheelchairs	0	2
Braille resources for learners with visual impaiment	1	1
Classes have sign language interpreters	0	2
Different classes/units	1	0

Percentage of schools
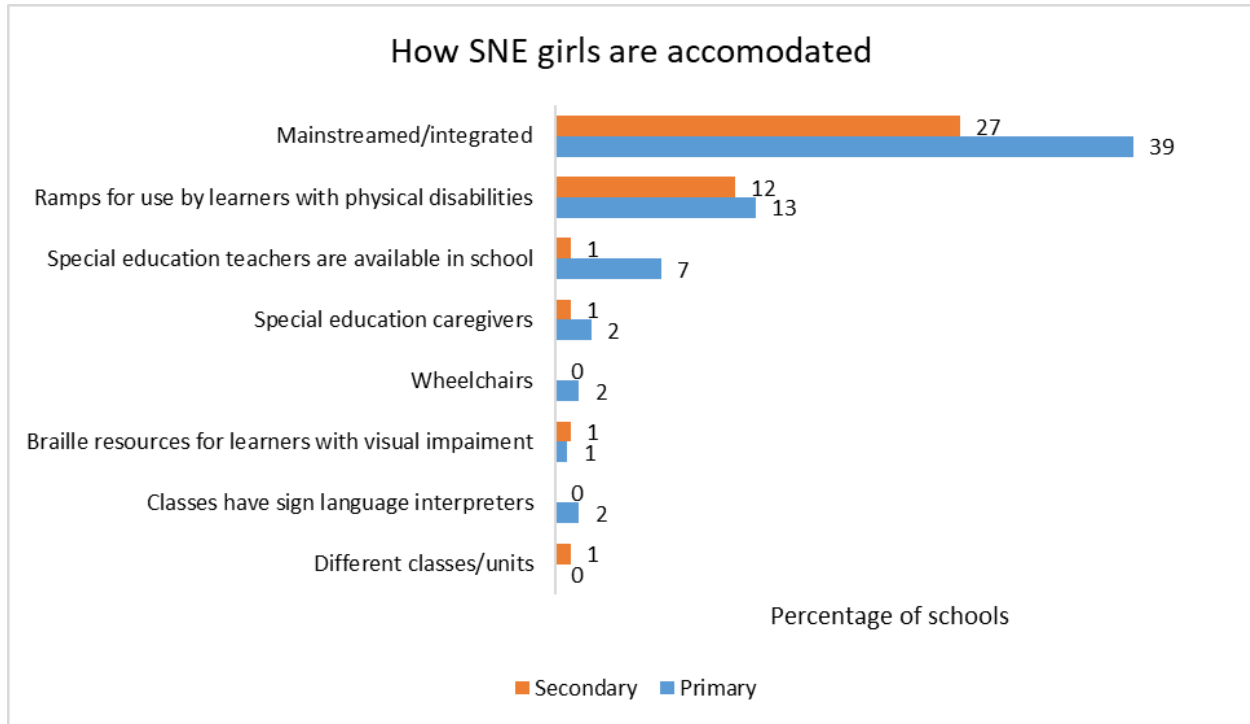
■ Secondary ■ Primary

Figure 44: How SNE female learners are accommodated

On the other hand, most primary and secondary schools reported having mechanisms in place to accommodate male learners with special needs. Of these strategies, mainstreaming of these learners into the regular school setup scored highest at 40 percent at Primary and 30 percent at Secondary school levels. The availability of ramps to accommodate learners with physical disabilities scored second at 15 percent at the secondary level compared to 13 percent at the primary level. At the primary school level, having special education teachers was ranked third for learners at the primary school level.

Gender and Education: Evaluating Gender Mainstreaming Practices in Curriculum Implementation in Kenya
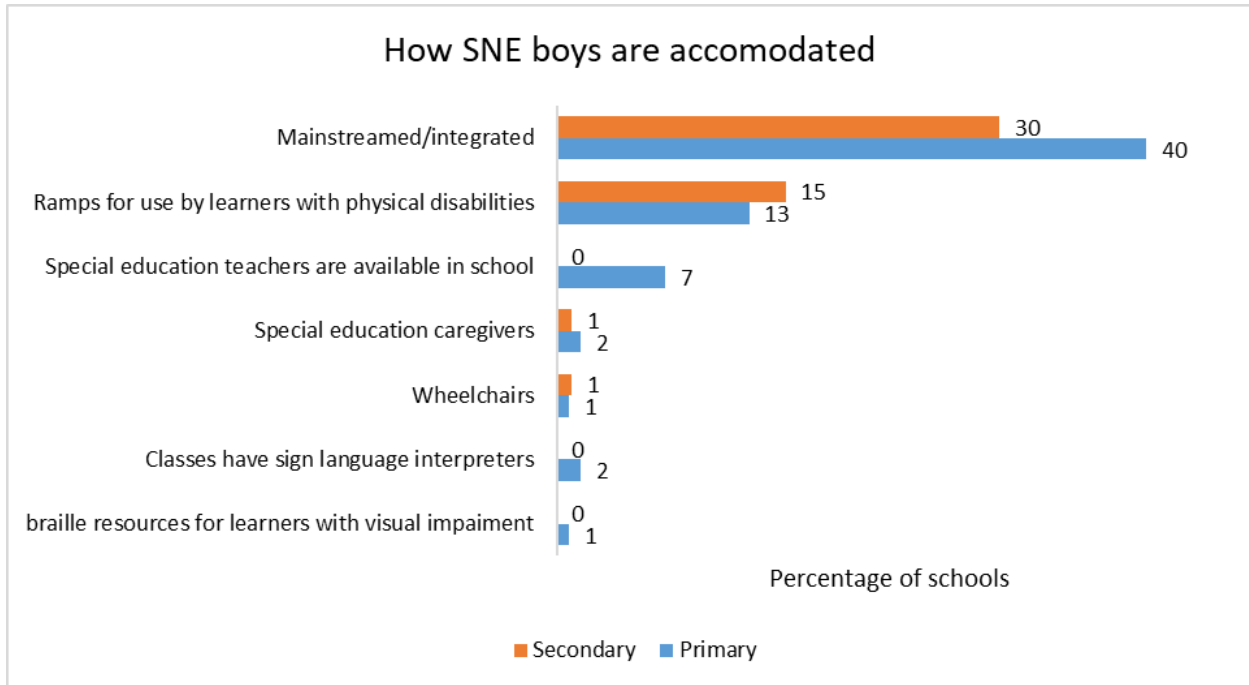
Figure 45: How SNE male learners are accommodated

d. Awareness of Educational Assessment Resource Centers

According to Figure 46, on average, about 68 percent of primary schools reported being aware of Educational Assessment Resource Centers (EARCs) for identifying learners with special needs compared to 47 percent of secondary schools. Furthermore, private secondary schools scored slightly higher at 50 percent as compared to public secondary schools at 46 percent.
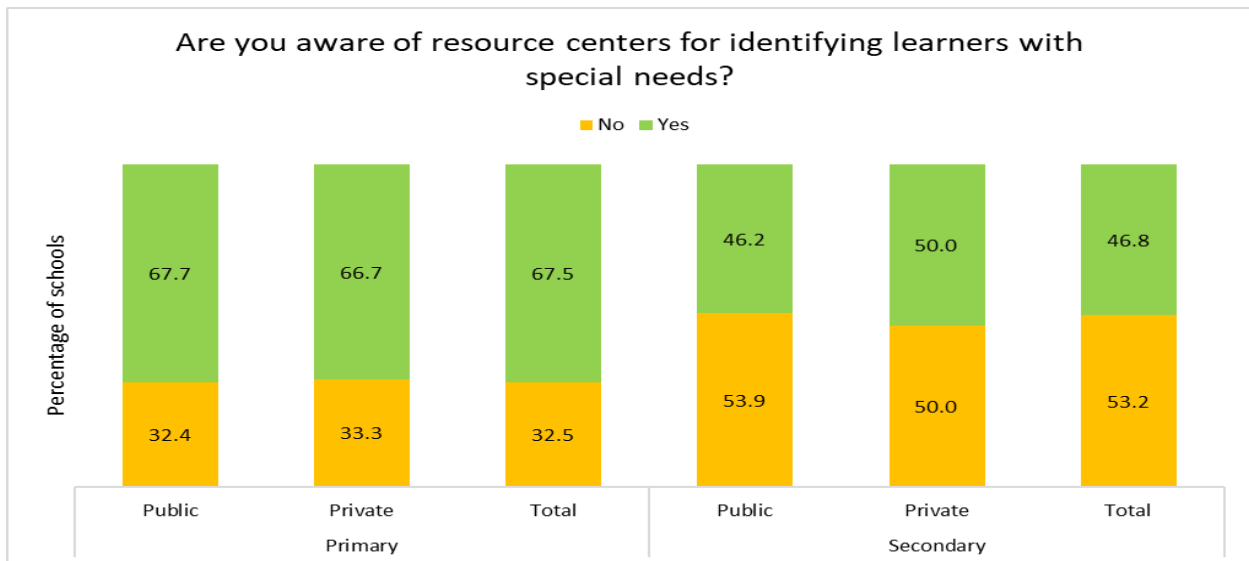
Figure 46: Awareness of resource centers for identifying learners with special needs

e. **Accessibility of Educational Assessment Resource Centers**

With regards to accessibility of the EARC centers, on average, only 26 percent of primary schools reported that the centers were either very near or near far as compared to 33 percent of secondary schools reported on the same.
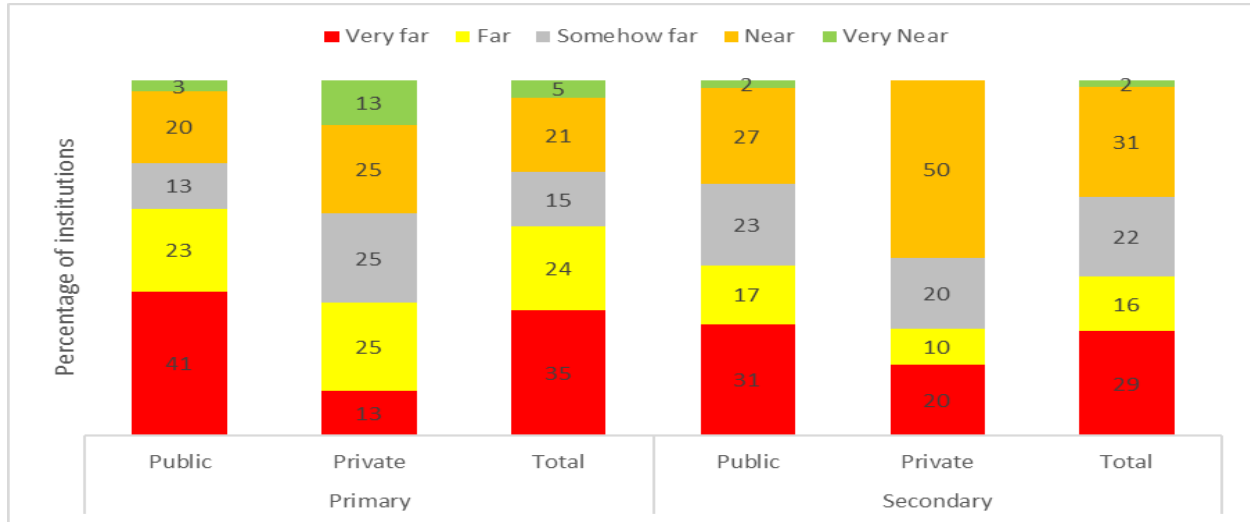
f. **Availability of teachers trained on special needs education**

In terms of staffing, about 32% of primary schools had teachers trained on SNE, with the majority coming from public schools (37%). On the other hand, only about 10% of secondary schools had teachers trained in SNE. The majority of these SNE teachers at the primary level had a diploma teacher training qualification, while the secondary school SNE teachers had a bachelor's degree.
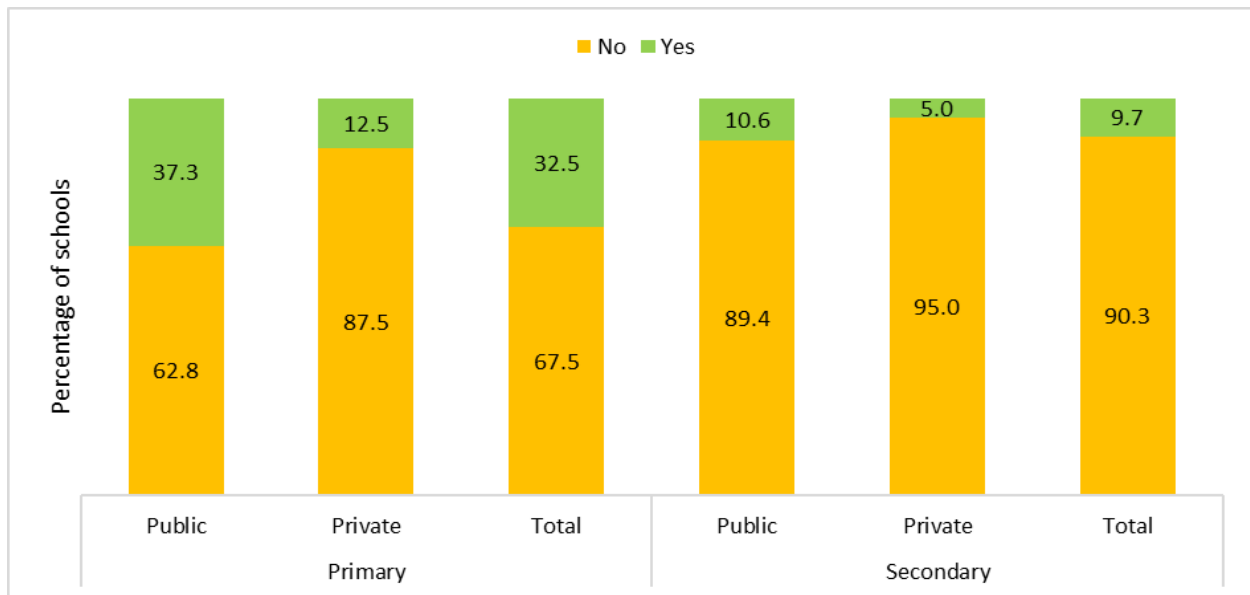
Figure 47: Does this school have teachers trained in SNE

6. Discussion

Effective implementation of gender-mainstreaming policy guidelines in education systems is one of the key drivers to attaining SDGs 4 and 5 and as well as the national goals of education. This research project highlights evidence on how the teacher training curriculum in Kenya prepares pre-service teachers to implement gender mainstreaming strategies within the basic education sector. Secondly, the study also examined how gender mainstreaming is practiced inside classrooms during the teaching and learning process and how the observed practices are associated with students' school attendance, choice of subjects, and academic performance. Lastly, we examined the strategies that basic education by stakeholders, including the government and development partners, implemented to mainstream gender issues in the curriculum.

Gender mainstreaming in the teacher training curriculum

Teacher training programs (pre-service, in-service, and practicum) are the primary means through which teachers acquire knowledge, didactic, and practical skills in content and pedagogical content knowledge necessary to be effective teachers (Darling-Hammond, 2002). Therefore, it is critical for the pre-service training programs to provide a strong theoretical and practical foundation of content and pedagogical content knowledge, along with multiple opportunities for trainees to link theory and practice through practicum experiences, with structured coaching and mentorship. Quality education and gender equality in teaching across all levels significantly impact boys' and girls' academic access, retention, and performance of boys and girls (FAWE, 2018). The findings on the extent of pre-service teacher preparedness to mainstream gender issues demonstrated that, generally, the trainees had positive perceptions of effective gender-inclusive practices in teaching and learning. However, there were notable discrepancies/limited knowledge of effective practices in areas such as gender-responsive lesson planning, the influence of sitting arrangement on learning, female learners requiring more assistance in STEM, and limited knowledge of effective classroom management practices. The trainees' scope of knowledge of the term gender mainstreaming is limited to the perspective of equal participation of boys and girls in learning, equity for both genders in distributing learning resources, eliminating biased cultural practices, and equal representation in leadership. These positive indicators are an indication that the trainees understand the importance of gender mainstreaming in teaching and learning. Quality teacher preparation programs must impart the trainee's with knowledge and skill sets to mainstream gender issues in basic education. A concrete understanding of gender mainstreaming is demonstrated by understanding and application of gender equality issues beyond the classroom level and should be articulated as an ongoing process in program design and implementation, policy processes, and plans at the national, community, and school levels, governance and management of schools, capacity building, monitoring and evaluation, and budgeting with the ultimate goal of achieving gender equality (Daly, 2005, FAWE, 2018; Frei & Leowinata, 2014; United Nations, 1997). Gender mainstreaming goes beyond the assurance of surface equality but entails confronting the

marginalization and trivialization of gender matters and looking beyond the processes that assure surface equality (Unterhalter & North, 2010).

The surface level of understanding of gender mainstreaming exhibited by the teacher trainees is attributed to limitations in the TTC curriculum which does not explicitly address gender mainstreaming. This finding suggests that the Diploma in Primary TTC curriculum does not adequately equip pre-service trainees with content and pedagogical content knowledge to implement gender-responsive pedagogy in teaching and learning. Gender mainstreaming is not built into the preservice curriculum (the integrated content and pedagogical learning areas and the professional learning areas) as it is neither taught as a stand-alone unit nor a topic and is not assessed in the internal and external examination. The general knowledge and understanding demonstrated by the teacher trainees is mainly acquired from general courses such as Child Development and Psychology as well as Inclusive Education and other private training and general national legislative reforms such as the two-third gender rule. The child development and Psychology course focuses on human development therefore, trainees learn about the developmental differences between boys and girls and gender inclusive teaching and learning practices. On the other hand, the Inclusive Education course focuses on imparting a general understanding of inclusive education, knowledge, skills, values, and attitudes among the trainees in order to support diverse learners in an inclusive learning environment.

The limited understanding of effective gender mainstreaming practices in teaching and learning was attributed to deficiencies in the TTC curriculum. The teacher trainees lack a theoretical background in gender mainstreaming and pedagogical skill sets to utilize gender-inclusive approaches in the processes of assessing student needs and challenges, lesson planning, teaching practices, classroom practices, management, and performance evaluation (FAWE, 2018). The pedagogical aspects could embed gender-inclusive practices to equip trainees with knowledge and skills to combat personal biases and empowerment to challenge the stereotypical and prevalent myths in their communities. Training should allow trainees to have intellectual discussions around these gender aspects that impact their teaching and students' learning processes.

The theoretical and pedagogical content knowledge on gender mainstreaming and gender-responsive instructional skillsets need to be integrated into curriculum content, practicum experience, and assessment (internal and the Kenya National Examination Councils (KNEC) teacher certification exams and allocated adequate instructional time. There are several opportunities to embed gender inclusive practices in the pedagogical content sections and also through micro-teaching if the gender issues are inbuilt into the micro-teaching and practicum experience assessment framework. For instance, gender issues and gender-inclusive teaching practices could be incorporated into the following learning outcomes, such as observing and critiquing video clips of lessons demonstrated by resource persons and analyzing components of micro-lesson for skills improvement. Gender-inclusive teaching and learning practices could be included as one of the indicators in the suggested assessment rubrics in the various subtopics of

micro-teaching. To illustrate, one criterion for the evaluation would be gender inclusivity as an indicator of a reflective teacher. The trainees could critique the recorded video lessons for gender-inclusive practices. Gender-inclusive practices could be included in the poster design learning activity, and trainees can share how this can be applied in teaching. When students practice microteaching in a model school, gender-inclusive practices could be included as a section of their report. This ensures that teachers are trained to make their classrooms gender-responsive (UNESCO, 2004). These findings corroborate previous research, which noted gaps in the pre-service curriculum where training in gender focused on factual knowledge of gender differences and not gender-inclusive practices (Farah et al., 2009). Consequently, the pre-service trainees enter the teaching field without a concrete understanding of the theoretical frameworks and pedagogical content knowledge on gender mainstreaming in teaching and learning. Without intentional efforts to train preservice teachers on gender mainstreaming in teaching and learning, the trainees are at risk of reverting to using approaches and strategies used by their teachers when they were students. Training programs that are intentional and strategic are able to change the mindset and trainees' existing knowledge and beliefs about pedagogy from their own experiences and school pupils (Lewin & Stuart, 2003). Individual perspectives and biased on gender equality always remained unchallenged and are difficult to change; therefore, quality training should enable teacher trainees to assess and challenge their own gender biases and diversify their teaching and assessment styles (FAWE, 2018). Without quality training and practicum experience, trainees are not able to navigate and overcome personal unconscious gender-biases beliefs and behaviors; hence they continue to apply teaching methods that do not meet the learning needs of boys and girls and draw upon gender-insensitive materials, thus reinforcing gender stereotypes (Frei & Leowinata, 2014). Research evidence indicates that training on how to use gender-responsive tools in teaching and learning empowered teachers who, in turn, demonstrated more control in their instructional strategies and effectively created an open and safe learning environment for their students (FAWE,2009). Moreover, research evidence highlights in teacher training colleges where the FAWE's GRP was implemented; there was positive behavior change as some tutors stopped using discriminatory, abusive, and threatening language (FAWE, 2018). Teachers trained to use gender-responsive practices have exhibited improvements in classroom planning, management, and use of gender-responsive practices, with increased capacity to analyze teaching materials for gender bias and counter negative stereotypes for girls and boys (Bever, 2014).

The TTC tutors also demonstrated some understanding of gender-inclusive teaching and learning processes depicted by the ceiling effect on the perception questions and also the observation data. These results should be interpreted cautiously as the classroom observation data were collected from only 7 TTC tutors and hence may not be generalizable. The TTC tutors used gender equitable practices such as grouping, where both genders were given equal opportunities. The tutor's understanding of equality does not go beyond the surface level. The TTC tutors do not highlight planned actions, including legislation, policies, or programs, in the education sector or at all levels. They do not view gender mainstreaming from the perspective of an integral dimension of the design, implementation, monitoring, and evaluation of education policies and programs in all

political, economic, and societal spheres so that women and men, boys and girls benefit equally. This gap in knowledge/ bias or gap in the holistic understanding of gender mainstreaming could be attributed to a lack of capacity building on gender mainstreaming for the TTC tutors. Furthermore, gender-biased views were noted among the Tutors, as some believed that male trainees were more rigorous researchers than female trainees. From the responses given, it is unclear that gender equality issues are prioritized in teaching and learning, research, governance, outreach, student and staff welfare, and organizational culture, as these are not highlighted in the responses. Kenya could borrow from successful frameworks implemented in other countries, Burkina Faso, Mali, Senegal, Burundi, Eritrea, and Uganda that have mainstreamed gender in the teacher training curriculum in efforts to raise gender awareness among teachers in pre-service and in-service training (Global Partnerships for Education, 2017). In Ethiopia and Malawi, the Ministries of Education mandated mainstreaming FAWE's Gender Responsive Toolkits in teacher training colleges (TTCs) policy (FAWE, 2018). In Malawi, the incorporation of the FAWE's GRP led to the establishment of gender committees in TTCs, gender-balanced student councils, the development of a gender policy at the TTC level, the development of a gender-responsive orientation manual for TTC lectures. Key programming activities could be adopted in Kenya when curriculum reforms are done at the TTC to incorporate gender mainstreaming.

Gender mainstreaming pedagogical practices in basic education classrooms

The second research question examined whether gender mainstreaming is practiced within teaching and/or lesson delivery in basic education. Our findings showed a disparity in implementing gender-equitable instructional practices in pre-primary, primary, and secondary schools. Generally, teachers in pre-primary and primary levels tended to use gender-equitable practices in teaching and learning. However, disparities were noted at the secondary level in which teachers engaged boys more than girls in learning activities. There was a lack of consistency in observations of the following instructional aspects, connecting classroom content with daily life applications, group discussions taking into account gender issues phrasing questions to reflect gender representations, and use of fair or unbiased corrective measures. A few areas with higher consistencies include allowing sufficient time for students to answer questions, the culture of positive and respectful relationships, professionalism in teacher presentation, and mixing boys and girls in the classroom. An examination of the associations between gender-equitable classroom practice and learning outcomes indicated that gender-equitable classroom interactions positively influenced learning outcomes in Mathematics, English, and Science subjects at the primary and secondary levels. Moreover, gender-responsive classroom environments positively influenced learning outcomes in the target subjects. The finding that lesson planning was negatively associated with learning outcomes deviates from converging literature which suggests that the best practice for teachers is to account for gender differences in planning lessons considering the learning needs, social backgrounds, and learning styles (FAWE, 2018).

Gender and Education: Evaluating Gender Mainstreaming Practices in Curriculum Implementation in Kenya

Effective teaching practices that pay attention to the specific needs of boys and girls are critical for students' academic achievement and socio-emotional well-being in general. Effective practices include appropriate language use to promote gender inclusion and equality, considering gender differences during lesson planning, and selecting teaching and learning materials, methodologies, activities, and classroom arrangement and setup (FAWE, 2018). The consideration of effective gender-responsive practices promotes gender equality and empowers learners, encourages learner-centered pedagogy, establishes mutually supportive interactions between students and teachers, and cultivates safety and an inclusive learning environment (Ngware et al. 2012; FAWE 2018). In corroboration with previous research, the present findings suggest that the teaching practices in mixed secondary schools reflect gender biases, stereotypes, and insensitivity, beliefs, attitudes to the learning needs of boys and girls equally (Kiptoo-Tarus, 2016; Skelton et al., 2007; Ngware et al., 2012). These findings could be attributed to a lack of professional development training, coaching, mentorship, and support on gender-responsive teaching, personal/implicit biases informed by cultural influences, and stereotypes. Teachers need the awareness that their language modeling is a powerful tool to define and promote gender relations and can be utilized positively to enhance gender inclusion and awareness in teaching and learning (Fisher, Frey & Rothenberg, 2008). Training for teachers should also encompass gender-responsive language use practices (Uworwabayeho et al., 2018). Furthermore, evidence from secondary school also indicated lesson planning was negatively correlated with learning outcomes.This finding deviates from the extant literature because lesson planning that takes into account the learning needs of male and female learners improves the quality of their learning experiences.

Association of teacher pedagogical practices and students' school attendance, choice of subjects, and academic performance?

Gender Parity, School Attendance, and Absenteeism

Even though Kenya seems to have achieved gender parity in enrollment in education at primary and secondary levels, our findings indicated regional disparities in enrollment that vary in the various counties (Ministry of Education, 2019). Overall the enrollment of boys and girls in the target counties was low, with some counties particularly those located in ASAL areas doing relatively poorly compared to others. Another prevalent challenge noted within the target study sites was irregular school attendance which impacted boys and girls differently. The low enrollment rates in the study sites could be attributed to high levels of poverty among households, nomadic lifestyle, poor infrastructural development, and ethnic and cultural practices (female genital mutilation, initiation and rites of passage, cattle rustling, insecurity, distance to school, lack of school safety which disproportionately affect women and girls (Mogoshi et al., 2012).

High rates of absence from school impact students' academic achievement, as poor attendance predicts poor outcomes, with absences associated with grade tardiness and grade retention and can result in dropping out of school (Morrisey et al., 2014; Gershenson et al., 2015). Direct benefits

of regular student attendance are participation in teacher-led discussions, peer interactions, targeted activities that foster learning, access to new curriculum content, and participation in class activities. The main reasons for absenteeism for both boys and girls at the primary level were sickness, domestic responsibilities, and school fees. At the secondary level, the main reasons were sickness and lack of school fees. For girls, the other common reason for lack of regular school attendance was due to monthly periods, pregnancy, or parenting of adolescents. As evident, some issues affect girls only; therefore, there should be intentional efforts to mitigate these gender-specific challenges. These findings corroborate with studies conducted in other regions in Kenya, which indicate that sickness (Malaria), lack of money, and menstruation, poor menstrual hygiene practices are the main causes of absenteeism among primary and secondary school learners (King et al., 2015; Korir et al., 2018). The persistent challenges of pregnant and parenting adolescents was exacerbated by the COVID-19 pandemic as many vulnerable girls were at risk of falling pregnant prior to completing school (Zuliaka et al. 2022). Our findings further demonstrated that indicators of improved school attendance in primary schools included school feeding program. The other important indicator of school attendance is the use of gender responsive pedagogy aspects such as gender responsive classroom environment, gender equitable classroom interactions and gender responsive teaching and learning materials. The use of effective gender responsive pedagogical approaches in basic education settings positively influence the participation of students during the learning process, learning outcomes, high teacher self-efficacy, school attendance (FAWE, 2018; Jahangir & Mankani, 2016).

If the challenges that inhibit regular school attendance are compounded over time without strategic interventions, impact retention, and transition rates, ultimately leading to school dropout and perpetuating the generational cycles of poverty. The research report that strategic interventions implemented by education stakeholders to improve the rates of school enrollment, attendance, retention, and transition in ASAL regions include financing the schooling costs of secondary school, school feeding programs, the introduction of low-cost boarding schools, providing menstrual hygiene facilities, support, and school reentry for pregnant and parenting adolescent parents, 100 % transition policy (Ministry of Education, 2020; Muigai 2020). Potential mitigation strategies could include the provision of subsidized medical health insurance coverage to all children in institutions of basic education, further reduction of education costs, and strengthening the established school feeding programs, provision of sanitary pads, advancement of the WASH facilities, a defined budget for WASH facilities and regular monitoring (Alexander et al., 2018; King, et al., 2015). Teacher absenteeism was also a notable problem across the study sites, as there were notable absences within a specified duration of five days. Teacher absences are likely to trigger or cause student absences, and missed learning opportunities lead to poor student outcomes (Gershenson et al., 2015). It is important that education stakeholders explore the possible mechanisms that can encourage optimal teacher attendance beyond the current ones being implemented or enforced by the Ministry of Education while being cognizant that these teachers are from hardship areas. The external hardship factors are out of their control. Improving vulnerable and disadvantaged children's attendance patterns fosters social inclusion,

socioeconomic mobility, and educational attainment (Heckman & Kautz, 2013). It is important that the implementation of the strategic interventions should have a clear implementation framework, budget allocation, monitoring and evaluation plans, and be intentional to cater to the needs of both boys and girls and promote gender equity and inclusion.

The Choice of Subjects

The findings indicated that, generally, secondary school students had a low preference to pursue optional science subjects, particularly physics, with lower proportions of girls selecting the subject. Biology was the other optional subject, and slightly more girls opted to choose biology than boys. Of the optional humanities, more boys preferred to select geography than girls. Subject selection is an important aspect in shaping the learner's future career aspirations; therefore, the general low preference to pursue certain STEM subjects indicates that students from certain regions in the country are unlikely to pursue certain STEM related career trajectories. STEM training is important for the realization of Vision 2030 and the national goal of becoming an industrialized nation by 2030. According to the students, the main factors for specific subject selection were good performance in the subject, interest in subjects, future career aspirations, and teacher quality. According to, Njiru & Karuku (2015), some factors that contribute to low performance in physics stem from the learners, such as time management and mathematics background, low self-efficacy, low quality of teaching, and availability of learning resources (labs), lack of quality guidance and mentoring structures. These factors could contribute to the low interest in Physics in the target counties. Other factors that influence the choice of subjects in secondary school include school type, gender, parents' occupation, school location, information about the subject objectives, and link to career (Werunga et al., 2013). In the marginalized or high-poverty areas where students rely primarily on the schools (teachers) for guidance on career choice and subject selection, it is paramount for schools (primary and secondary) to have structured academic mentorship, academic and career guidance for students to be mentored and guided appropriately on career advancement. This strategic mentorship program should focus on increasing the number of female students selecting STEM subjects and pursuing STEM careers, demystifying the common perceptions about science and STEM being a specialization for boys, and improving students' efficacy. Teaching quality is correlated with student performance and plays a key role in motivating students to select subjects and pursue certain careers. In secondary schools in the target counties, there were notable discrepancies and a lack of gender-inclusive practices where class interactions and engagement favored boys over girls. It is important for learning institutions to have structured mentorship programs that encourage the participation of vulnerable girls in STEM fields. These programs sensitize, coach, and mentor them to embrace STEM subjects and also to pursue STEM careers. Quality teaching is also a critical component of the learning process. In-service teachers in the study struggle to use effective gender inclusive strategies. Therefore, there is a need for deliberate efforts for capacity building for in-service on how to use gender-inclusive teaching strategies while attending to the needs of individual learners.

Gender and Education: Evaluating Gender Mainstreaming Practices in Curriculum Implementation in Kenya

Academic Outcomes

Using the KCPE and KCSE longitudinal data sets as a proxy measure of the learning outcomes for the targeted schools. The findings revealed that gender responsive teaching approaches positively influenced learning outcomes in English and Mathematics in primary schools. At the secondary school level, gender equitable interactions between boys and girls resulted in improvement in performance in Biology, English, Mathematics, and Physics. The other factors that contributed to good performance in schools include the availability of a school feeding program, school facilities such as a library, laboratories, physical classrooms, and improved school attendance. Though the academic outcomes measures used in the present study is a proxy measure, the findings underscore the importance of gender responsive pedagogy on influencing student learning outcomes in language, and STEM subject areas. According to FAWE (2018), strategic gender responsive pedagogical interventions influence student participation during the learning process and enhance learning outcomes.

Gender mainstreaming practices in institutions of basic education

Findings from the study also highlighted that almost half of all primary and secondary schools in the study did not have institutional policies and guidelines on sexual and gender-based violence (SGBV). Most of the institutional heads who reported having the policies and guidelines could not show them to the research team. This is a major gap considering that GBV is a global and national concern as it undermines the achievement of quality, inclusive and equitable education for all children and threatens their socio-emotional well-being. According to UNESCO (2016), school-related gender-based violence comprises of acts or threats of sexual, physical, or psychological violence occurring in and around schools, perpetrated as a result of gender norms and stereotypes, and enforced by unequal power dynamics. Global estimates indicate that gender-based violence in and around schools affects more than 246 million children yearly (UNESCO, 2016). Regionally, reports show that pupil-pupil and teacher-pupil sexual harassment is prevalent in schools. About two out of five school principals in Southern and Eastern Africa acknowledge sexual harassment occurred between pupils in their primary schools (UNESCO, 2015). Findings from the Kenya 2019 Violence Against Children Survey (Republic of Kenya, 2019) indicate that childhood sexual violence was experienced by 15.6% of females and 6.4% of males before age 18. Further, 18.4% of females experienced the first incident of childhood sexual violence at age 13 or younger, 26.6% between age 14-15, and 54.9% between ages 16-17. The findings also highlighted that romantic partners and schoolmates were common perpetrators of childhood sexual violence. Clear policies and guidelines that are accessible to the school communities are one of the important measures to make the school environments safe, secure, and free from sexual and gender-based violence. The lack of easily accessible policies and guidelines indicates that the school systems are not effectively implementing measures to safeguard students, teaching, and non-teaching staff against GBV. This is a major gap in ensuring effective implementation and sensitization of the policies to the school community, including students, teachers, non-teaching staff, and outsiders who interact

with the schools, especially considering that evidence indicates that only a third of those who experience these incidences know where to seek help and even fewer actually seek help (Republic of Kenya, 2019).

In terms of teacher staffing, findings from the study indicated that teaching in the target regions remained a male-dominated occupation at the secondary school level, with a relatively equal proportion of male and female teachers at the primary school level and significantly more female teachers at the pre-primary level. Regarding teacher qualifications, most pre-and primary-school teachers held a certificate in teacher education. At the secondary school level, over 80 percent of the teachers held a bachelor's in teacher education. The gender imbalance of male teachers in early childhood education is a global concern (Anliak & Beyazkurk, 2008; Peeters, Rohrmann, & Emilsen, 2015; Xu, Schweisfurth, & Read, 2022; Xu & Waniganayake, 2018). Studies indicate that the main reasons behind the low participation of male teachers in early childhood education are the identification and perception of early childhood teaching as "women's work", low salaries and status, and fear of being accused of sexual abuse (Anliak & Beyazkurk, 2008; Bhana, Moosa, Xu, & Emilsen, 2022). The low male participation in the targeted study sites could be attributed to the aforementioned reasons. There has thus been a global call to improve the participation of male teachers in early childhood education mainly by changing the deeply held gendered attitudes that they do not have the capacity to nurture and support children (Anliak & Beyazkurk, 2008; Peeters et al., 2015). Unlike other contexts, especially in developed countries, where participation of male teachers in primary school education is low (de Salis, Rowley, Stokell, & Brundrett, 2019; Mills, Martino, & Lingard, 2004), this study found that although there was proportionately more male (54%) compared to female (46%) teachers in the study schools, the difference was not significant. This result highlights that the objective of ensuring a gender balance in the deployment of teachers and instructors at the primary school level in the Gender and Training Sector Gender Policy is being achieved. The other possible reason for the relatively equal number of male and female teachers cited in the literature is male teachers' preference for secondary school teaching positions, as the positions are better paying (Bozkurt, 2021). This notion is also supported by Carroll, Parasnis, and Tani (2021), who posit that schools that offer higher wages tend to attract more male teachers. The strongly held perception that men are the family's main wage earners, coupled with the low wages for primary school teachers and the higher opportunity cost of getting into the teaching profession due to disproportionately better-paying jobs compared to women, are also key reasons why there are more male teachers at secondary school (Johnson, 2008). These reasons could perhaps speak to the study finding that three-quarters of teachers in secondary schools were male.There were also proportionately more male teachers in all subject areas and especially in mathematics and sciences. One of the key reasons behind fewer female teachers pursuing mathematics and science careers, highlighted in the literature, is the gender stereotype that these subjects are male domains (Makarova, Aeschlimann, & Herzog, 2019). Studies point out that this gender stereotype towards maths and science is persistent even in young children who, for instance, attribute masculine traits to science, such as generally perceiving scientists as men (Archer et al., 2010). A study by Cvencek, Meltzoff, and Greenwald (2011) also showed that as

early as second grade, children were already demonstrating the stereotype that math is for boys, and boys were also shown to identify with maths more strongly than girls. These stereotypes are also experienced in higher education, where significantly fewer women pursue STEM courses (Verdugo-Castro, Sánchez-Gómez, & García-Holgado, 2022).

Extant literature indicates that increasing the number of female teachers has a strong effect on the enrollment of girls and a limited or mixed effect on achievement (Haugen et al., 2014). Some studies suggest that parents' preference to enroll their daughters in school depends on whether there are female teachers (Herz, Herz, & Sperling, 2004; Rihani, 2006). In a multivariate analysis of data from 222,000 households in 30 developing countries, Huisman and Smits (2009) found that in addition to socioeconomic and demographic household characteristics, parents' decisions regarding their children's education were also influenced by the number of teachers and percentage of female teachers in a school. The study showed that as the percentage of female teachers increased in school districts, so did the likelihood of girls going to school. They also found that enrollment of girls faced with socio-cultural barriers was highest in schools with female teachers. This evidence is especially important in enhancing school attendance for girls in developing countries, who still face many socio-cultural barriers such as child marriage, early pregnancy, female genital mutilation, and preference for boys' Education. Further, female teachers are pivotal role models in the participation of girls in STEM subjects and future careers. For instance, a recent study by Dulce-Salcedo, Maldonado, and Sánchez (2022) found that exposing female students to a higher proportion of female STEM teachers at the secondary school level increased the probability of enrolling in STEM courses at the tertiary level.

Gender differences were also persistent in school leadership positions, with proportionately more male teachers as heads of departments for various subjects in the school and as school heads. Again, the gender stereotype challenges that women are not as good in leadership as men, despite research evidence indicating minimal differences in leadership between men and women (Msila, 2013). As a result of this stereotype, female school leaders have been shown to face challenges such as receiving more inspections from education authorities than new male heads, lacking respect from the school community if not married, and being negatively stereotyped if they have different religious affiliations from the community (Dzimiri & Jita, 2022). Oyeniran (2020) highlighted that social-cultural factors, especially in the African context where women are perceived as subordinate to men and are not allowed to make decisions or, in extreme cases, not allowed to talk in front of men, also hinder women from taking up leadership roles in the schools. The study also showed that female school heads often face a challenge in integrating family obligations with work responsibilities and sometimes are forced to either quit their workstations or break up with their spouse. Female school heads also face negative attitudes from parents and teachers (Shava, Chasara, Tlou, & Mathonsi, 2021).

The Board of Management (BoM) and the parents association (PA) are duly constituted bodies within Kenya's basic education act, 2013 (Republic of Kenya, 2013), and their key mandate is to

supervise and assist the school management in decision-making for the effective running of the school. The study findings showed that, unlike the parents association, the majority of the schools reported that the board of management at both primary (70%) and secondary (61%) levels discussed school matters using a gender lens. This was despite many of the schools also reporting not being trained on gender mainstreaming. On the other hand, the membership for the two bodies was male-dominated. The fact that these bodies lack the capacity and are also not gender inclusive in their membership may be a key impediment to the effective implementation of gender mainstreaming practices within the school. In the same light, the quality assurance and standards and public health officers who are part of the supervision structure to ensure the provision of quality education were also found not to address issues of gender mainstreaming in the study schools. This is perhaps why pertinent gender mainstreaming challenges such as lack of policies on gender-based violence, inadequate toilet facilities for SNE students, inequalities in membership of BoM and PA, and inequalities in leadership positions still persist in schools.

Increasing the education participation for disadvantaged girls and women, boys, and men, including those with special needs, is a key objective of the Education and Training Sector Gender Policy. In this respect, one of the key focus areas for this study was assessing the support provided to students with special needs in terms of facilities to enable them fully participate in education and the availability of trained teachers on SNE. Results from the study illuminated huge gaps in access to education and support for students with special needs. Moyi (2017b) posits that policies to increase access to quality education in Kenya mainly focus on bridging the rural-urban, gender, and income inequalities and quiet on special needs education, whereas children with disabilities are significantly less likely to enroll, attend and complete their primary school education. This is perhaps why of the 4,662 students reached in the study, only 21 students (8 boys and 13 girls) with special needs were enrolled in the study schools. One of the key arguments for this skewed focus is that lack of money affects a majority of households in Kenya and is thus a priority for the government as compared to disability which affects a very small population (Moyi, 2017a). Evidence indicates that the other key reason for low school participation that is consistent with the study findings are inadequate educational facilities and learning materials that cater to students with special needs and the lack of knowledge about available facilities by households with children with disabilities (Moyi, 2017a; Okech, Imam, & Wamaungo, 2020). For instance, whereas nearly all primary and secondary schools in our study reported having separate toilet doors/stances for male and female students, only 8% of primary schools and 7.3% of secondary schools that enrolled SNE students had designated toilets for them. The type and severity of the disability also increases the likely hood of children with disabilities not participating in education (Moyi, 2017a). Identification of students with special needs so that they can receive specialized support is therefore a key gap, with the lack thereof resulting in the students being accommodated in ordinary classes without special educators or assistive learning facilities (Mapunda, Omollo, & Bali, 2017). This was consistent with the study findings, where students with special needs were mainly integrated into normal classes with other students despite inadequate SNE facilities and trained teachers to support their learning. To echo these challenges, Allam and Martin (2021) highlighted

that most teachers supporting special needs education students either have not received SNE training or do not feel qualified to teach them. Teachers have also been shown to use limited inclusive pedagogical practices, such as instructional adaptations, to meet the needs of SNE students (Kuyini & Desai, 2008). Our study findings highlighted this gap where only about a third of primary and ten percent of secondary schools have teachers who were trained on SNE. For SNE students to fully participate in education, it is imperative for the Ministry of Education and relevant stakeholders to ensure that adequate educational facilities are available, teachers are well trained to support the students, and that the community is sensitized on available facilities. In addition, considering that disability is associated with poor long-term life outcomes such as poverty owing to the fact that children living with disabilities are less likely to access education and employment opportunities (Filmer, 2008), it is vital to ensure that they are supported to fully participate in education and acquire requisite skills for employment.

7. Conclusion

Using the Gender Integration Continuum framework, the findings from the study highlight that teacher training, pedagogical practices at the basic education level and institutional practices generally fall within the gender aware segment of the spectrum indicating a need for enhanced sensitization and implementation of the revised Education and Training Sector Gender Policy. For instance, the content analysis of the teacher training curriculum designs revealed that gender mainstreaming in education is not deliberately covered, meaning that they do not define and illustrate strategies of how teachers can be gender inclusive in their teaching practices. That said, teacher trainees and their tutors tended to have a relatively good understanding of what the concept of gender mainstreaming meant albeit with some room for improvement especially in the knowledge of the need to consider learning needs for male and female learners during lesson planning, ensuring gender responsive classroom set up and gender stereotyping in assigning roles to male and female students, especially in STEM subjects. As recommended, this calls for a review of the teacher training curriculum designs to make them gender responsive or gender transformative. On the other hand, the classroom observation data showed that in-service teachers at the pre-primary and primary education levels were relatively gender responsive in their pedagogical practices, with gaps noted at the secondary school level. In particular, the teachers illustrated they were gender responsive by allowing sufficient time for students to answer questions, the culture of positive and respectful relationships, professionalism in teacher presentation, and mixing boys and girls in the classroom. Some of the areas where teachers showed gaps were in phrasing questions to reflect gender representations, taking into account gender in group discussions, and use of unbiased corrective measures. Again, the retooling and sensitization of all teachers to be gender inclusive in their teaching practices – and especially at the secondary school level – cannot be reiterated enough and thus highlighting the need to undertake a reform of the teacher training curriculum. Finally, the study results showed that institutions of basic education were skewed towards being gender aware or responsive in their practices related to

policies on gender-based violence, facilities, staffing, governance, and school leadership. However, as the study illuminated, having policies and guidelines on gender-based violence is not sufficient, as deliberate steps need to be taken to ensure that the school community (students, teaching staff, non-teaching staff, and community members interacting with the school) is well sensitized on the same to curb the cases of GBV in schools. That also calls for availing the policies and guidelines for public consumption, for example on notice boards, school diaries, school websites, and so on. In terms of hygiene and sanitation, the provision of toilet facilities was found to be gender transformative with nearly all the schools having separate toilet doors/stances for both female and male students. Whereas this is a positive finding, the study recommends that going forward the quality and adequacy of the facilities also need to be taken into consideration to enhance the health and academic outcomes. Although the schools tended to be gender aware in the staffing and participation of teachers in leadership positions, a multi-sectoral gender transformative approach that enhances equity in the deployment of teachers by TSC while at the same time eliminating the negative social norms that discourage girls and women to be leaders is needed. In the same breath, with the participation of students with special needs tending towards being gender blind, it is imperative that communities are sensitized on the need for these students to learn, enhance identification of students with special needs, ensure adequate teaching and learning facilities, and train teachers on SNE.

8. Policy Recommendations

Based on the study findings, we propose policy recommendations and strategic interventions in line with each thematic area of the 2015 education and training sector gender policy

Gender inclusive teacher training:
- Include engendered instructional approaches in the training modules in the Diploma Teacher Education Curriculum Guides.
- Gender mainstreaming could be taught explicitly as a stand-alone unit or integrated into the teaching methodology in subject areas.
- Gender mainstreaming should also be an outcome of the assessment in the courses and practicum experience.
- Provide capacity building (coaching, mentorship, and modeling) on gender mainstreaming for teacher training institutions and continuous professional development for in-service teachers.
- Allocation of resources to support the implementation of gender mainstreaming in all areas of teacher education.

Access:

- Institutionalize targeted interventions to increase the enrollment and attendance for boys and girls based on regional disparities and student gender. For instance, have programs to

reduce pregnancies at secondary school levels or programs to support pregnant and parenting adolescents.

- Sensitize communities on the availability of resource centers and schools that support SNE and promote enrollment and retention, and transition of children with special needs.
- Build the capacity of teachers and school administrators on the availability of resource centers and to identify resource centers and provide support (including best teaching practices) to students with special needs.
- Establish and equip resource centers at county and sub-county levels to evaluate and identify learners with special needs.
- Equip basic education institutions with facilities and trained teachers to support students with special needs.

Equity:

- Enhance school management structures such as BoM and Parents Associations that are gender inclusive – formation, representation, training, discussions, and training.

Quality Education:

- Capacity building for in-service teachers on gender-inclusive teaching practices in basic education for both in-service and pre-service teachers.
- Strengthen quality assurance and monitoring for effective implementation of gender equity in education and training at the college and school levels.
- Enhance supervisory mechanisms (head teachers, QASO, and CSOs) to ensure effective gender mainstreaming practices in the classroom.

Safety, security, and gender-based violence:

- Require/mandate institutions of learning to have guidelines on safety, security, and gender-based violence accessible to students, teachers, and non-teaching staff.
- Sensitize teachers, students, and non-teaching staff (including the board of management and parents associations) on the institutional guidelines and put in place mechanisms for ensuring compliance (monitoring and evaluation), e.g., on student diaries, posters, and seminars).
- The positive on school safety in regards to toilets should continue to be encouraged.
- Training on gender-based violence and sexual harassment for teachers, Quality Assurance and Standards Officers (QASO), and Curriculum Support Officers needed to build their own capacity to handle the cases if they arise and build the capacity of other teachers, students, and colleagues.
- Establish and implement standard operating procedures for reporting GBV and abuse in and out of school for learners, teachers, and non-teaching staff and legal redress for perpetrators of abuse and GBV.

Nurturing and mentoring:

- Deliberate efforts to encourage girls to pursue STEM subjects and careers at an early age, (formal mentorship programs to encourage STEM careers, role modeling).
- Encourage female teacher trainees to pursue STEM-related subjects and male teacher trainees to pursue humanities and languages.
- Provide incentives and create an enabling environment for students, particularly females, to participate in research and STEM courses
- Disseminate gender-friendly information on STEM degree programs and innovation, careers, job creation, and employability to learning institutions.

Governance and management:

- TSC and relevant stakeholders should ensure equal representation of male and female teachers in school and in leadership positions.
- Encourage and empower female teachers and parents to take up leadership positions in schools (administrative, HoD, BoM, and PA).
- Encourage and empower female students and parents to take up leadership positions in schools.
- Continue to encourage equal representation of students in leadership positions.

9. Limitations of the study

A few limitations of the research are worth noting. There were no readily available KNEC standardized assessments for grade six and form two students that were administered in 2022. It would have been ideal to examine the associations between teaching practices and student outcomes by looking at the linkages between a particular teacher and their current students' learning outcomes in the target subjects. Due to this limitation, the research team had to use proxy measures of the KCPE and KCSE assessments that indicated the school performance patterns over a duration of five years. Future research should consider exploring the associations between gender mainstreamed pedagogical practices and student learning outcomes using measures that directly link a teacher's instructional practices with their current learning outcomes.

10. Future Research Considerations

- Future research should gather more in-depth evidence on the implications of lack of access to the SGBV and sexual harassment guidelines on the well-being and safety of learners, teaching, and non-teaching staff.
- Empirical review of gender representation in teaching and learning materials in basic education.

Gender and Education: Evaluating Gender Mainstreaming Practices in Curriculum Implementation in Kenya

- Plan to generate empirical evidence by testing out strategic interventions in all the six thematic areas in the revised policy.
- Evidence based capacity building across institutions of higher learning including Universities and TTC to improve gender-mainstreaming pedagogical practices.
- Evaluate gender mainstreaming gaps and needs for students and teaching staff with special need and establish strategic interventions to address the needs.
- Research on best practices on adopting a multi-sectoral approach in mainstreaming gender issues in basic education.

11.   References

Abdi, A. A. (2019). Problems of Teachers at School Level in Garissa County of North-Eastern Kenya (Doctoral Thesis). North-Eastern Hill University, Shillong.

Aikman, S., & Rao, N. (2012). Gender equality and girls' education: Investigating frameworks, disjunctures, and meanings of quality education. *Theory and Research in Education, 10*(3), 211-228.

Aikman, S., & Unterhalter, E. (2013). Gender equality, capabilities and the terrain of quality education *Education quality and social justice in the global south* (pp. 25-39): Routledge.

Akpakwu, O. S., & Bua, F. T. (2014). Gender equality in schools: Implications for the curriculum, teaching, and classroom interaction. *Journal of Education and Practice, 5*(32), 7-12.

Barton, A., & Sakwa, L. N. (2012). The representation of gender in English textbooks in Uganda. *Pedagogy, Culture & Society, 20*(2), 173-190. doi:10.1080/14681366.2012.669394

Combat, V. F. (2014). Women Aspiring to Administrative Positions in Kenya Municipal Primary Schools. *International Journal of Educational Administration and Policy Studies*, 6(7), 119-130.

Eliasson, N., Sørensen, H., & Karlsson, K. G. (2016). Teacher-student interaction in contemporary science classrooms: is participation still a question of gender? *International Journal of Science Education, 38*(10), 1655-1672.

Elimu Yetu Coalition (EYC) (2003). Gender and Education: The Challenge of Educating Girls in Kenya. Elimu Yetu Coalition and Oxfam GB.

FAWE (2018). Gender Responsive Pedagogy: A Toolkit for Teachers and Schools. 2nd, updated ed. Nairobi: Forum for African Women Educationalists. FAWE House. https://www.unicef.org/esa/media/6726/file/GRP-A-Toolkit-for-Teachers-and-Schools-2020.pdf

Frosina, N. L., & Mwaura, G. M. (2016). An Assessment of Gender Mainstreaming in STI and the Knowledge Society in Kenya. *A report by the African Centre for Technology Studies.*

Government of Kenya. (2016). *Progress in the achievement of millennium development goals in Kenya Report 2015*. Retrieved from https://www.planning.go.ke/wp-content/uploads/2020/11/Progress-in-Achievement-of-MDGs-in-Kenya-2016.pdf

Gunderson, E. A., Ramirez, G., Levine, S. C., & Beilock, S. L. (2012). The role of parents and teachers in the development of gender-related math attitudes. *Sex Roles, 66*(3), 153-166.

Halim, S., Wahid, R. A., & Halim, T. (2018). Classroom observation-a powerful tool for continuous professional development (Cpd). *International Journal on Language, Research and Education Studies, 2*(2), 162-168.

IGWG. (2017). *Gender Integration Continuum Categories* Retrieved from https://www.igwg.org/wp-content/uploads/2017/05/GendrContinuumCategories.pdf

Jones, S., & Dindia, K. (2004). A Meta-Analytic Perspective on Sex Equity in the Classroom. *Review of Educational Research - REV EDUC RES*, 74, 443-471. doi:10.3102/00346543074004443

Joyce, K. J., Kosgei, Z. K., & Kitainge, K. (2014). Projecting students' enrolment and teacher demand in secondary schools in 2015: A survey of selected secondary schools in Kenya. *International Journal of Reviews and Research in Education* pp. 17 - 21. http://www.bluepenjournals.org/ijrre/pdf/2014/August/Kurgat_et_al.pdf

Kaimenyi, C., Kinya, E., & Chege, S. (2013). An analysis of affirmative action: the two-thirds gender rule in Kenya. *International Journal of Business, Humanities and Technology, 3*(6), 91-97.

Kasau, O. M. (2012). Factors influencing teacher attrition at public secondary schools in Mbooni East District, Kenya (University of Nairobi, Kenya). Retrieved from http://erepository.uonbi.ac.ke/handle/11295/7125

Kenya National Bureau of Statistics (2018). Basic Report: 2015/16 Kenya Integrated Household Budget Survey (KIHBS). Nairobi: KNBS. Available from: https://www.knbs.or.ke/?page_id=3142

Kollmayer, M., Schultes, M.-T., Lüftenegger, M., Finsterwald, M., Spiel, C., & Schober, B. (2020). REFLECT – A Teacher Training Program to Promote Gender Equality in Schools. *Frontiers in Education, 5*, 136. doi:10.3389/feduc.2020.00136

Legewie, N. (2013). *An introduction to applied data analysis with qualitative comparative analysis.* Paper presented at the Forum Qualitative Sozialforschung/Forum: Qualitative Social Research.

Mayeza, E. (2017). 'Girls don't play soccer': children policing gender on the playground in a township primary school in South Africa. *Gender and Education, 29*(4), 476-494. doi:10.1080/09540253.2016.1187262

Mayeza, E. (2018). 'It's not right for boys to play with dolls': Young children constructing and policing gender during 'free play' in a South African classroom. *Discourse: Studies in the Cultural Politics of Education, 39*(4), 590-602. doi:10.1080/01596306.2017.1290584

Mumiukha, C. K., Ngugi, M. N., Ndiga, B. A., & Fedha, F. (2015). Transitional Enrolment Trends within the Different Educational Levels in Kenya: An Analysis of Promoting Facets. *Journal of Education and Practice, 6*(33), 21-32.

Namatende-Sakwa, L. (2018). The construction of gender in Ugandan English textbooks: a focus on gendered discourses. *Pedagogy, Culture & Society, 26*(4), 609-629. doi:10.1080/14681366.2018.1436583

Namatende-Sakwa, L. (2019). Networked texts: discourse, power and gender neutrality in Ugandan physics textbooks. *Gender and Education, 31*(3), 362-376. doi:10.1080/09540253.2018.1543858

NGEC. (2011). The National Gender and Equality Commission Act, 2011. Retrieved from https://www.ngeckenya.org/Downloads/The_National_Gender_and_Equality_Act _2011.pdf

Ngware, M. W. (2011). Classroom observation study: A report on the quality and learning in primary schools in Kenya.

Ngware, M. W., Ciera, J., Musyoka, P. K., & Oketch, M. (2015). Quality of teaching mathematics and learning achievement gains: evidence from primary schools in Kenya. Educational Studies in Mathematics, 89(1), 111-131.

Ngware, M. W., Oketch, M., & Mutisya, M. (2014). Does teaching style explain differences in learner achievement in low and high-performing schools in Kenya? International Journal of Educational Development, 36, 3-12.

Nishimura, M. (2017). Effect of School Factors on Gender Gaps in Learning Opportunities in Rural Senegal: Does School Governance Matter? Working Papers 141, JICA Research Institute. https://ideas.repec.org/p/jic/wpaper/141.html

Ochieng, P. A. (2014). Impact analysis of gender mainstreaming in higher education institutions in Kenya. Zimbabwe Journal of Science & Technology, 41, 47.

Omukhulu, D. M., Ogbanicael, L., & Kimamo, G. (2016). Gender Mainstreaming in TVET Institutions in Kenya. Africa Journal of Technical and Vocational Education and Training, 1(1), 21-30.

Ruto, S., Mugo, J. K., & Tecla, K. (2010). Micro factors inhibiting education access, retention, and completion by children from vulnerable communities in Kenya. Retrieved from International Labour Organization website: http://www.ilo.org/global/docs/WCMS_204236/lang--en/index.htm

Scott-Villiers, P., Wilson, S., Kabala, N., Kullu, M., Ndung'u, D., & Scott-Villiers, A. (2015). A Study of Education and Resilience in Kenya's Arid and Semi-Arid Lands. https://www.researchgate.net/publication/303818211_A_Study_of_Education_an d_Resilience_in_Kenya's_Arid_and_Semi-Arid_Lands

Skelton, C., Francis, B. & Valkanova, Y. (2007). Breaking Down the Stereotypes: Gender and Achievement in Schools. EOC Working Paper Series No.59. England: EOC

Gender and Education: Evaluating Gender Mainstreaming Practices in Curriculum Implementation in Kenya

The Republic of Kenya. (2015). Education and Training Sector Gender Policy. Retrieved from https://www.education.go.ke/index.php/downloads/file/442-education-and-training-sector-gender-policy-2015

The Republic of Kenya. (2019). National Policy on Gender and Development. Retrieved from Kenya: http://psyg.go.ke/wp-content/uploads/2019/12/NATIONAL-POLICY-ON-GENDER-AND-DEVELOPMENT.pdf

TSC. (2015). TSC Strategic Plan 2015-2019. Teachers Service Commission.

TSC. (2019). TSC Strategic Plan 2019-2023. Retrieved from https://www.tsc.go.ke/index.php/media-centre/downloads/category/14- strategic-plan

United Nations.(2015).*The Millennium Development Goals Report*. Retrieved from New York: https://www.un.org/millenniumgoals/2015_MDG_Report/pdf/MDG%202015%20rev%20(July%201).pdf

Republic of Kenya. (2003b). Report of the Task Force on Implementation of Free Primary Education. Nairobi: Jomo Kenyatta Foundation.

UNDP. (2016). *Africa Human Development Report 2016 Accelerating Gender Equality and Women's Empowerment in Africa*. Retrieved from https://econpapers.repec.org/paper/agsundpar/267638.htm

UNESCO. (2020). *Gender-responsive education: Toolkit for Teachers, Teacher Educators, School Managers and Curriculum Developers in Africa*. Retrieved from Addis Ababa, Ethiopia: https://unesdoc.unesco.org/ark:/48223/pf0000375869.

United Nations. (2015). Transforming Our World: The 2030 Agenda for Sustainable Development. New York: UN Publishing. Book.

Uwezo, K. (2011). Are Our Children Learning? Annual Learning Assessment Report. Annual Learning Assessment, Nairobi, Kenya, George Bensons Media Issue. Retrieved from http://www.pokot.org/wp-content/uploads/2012/05/Uwezo2011.pdf

Uworwabayeho, A; Bayisenge, J; Katwaza, E; Umutoni, J; Habumuremyi, J.& Rwabyoma, A. (2018). National Gender-Responsive Teacher Training Package. Ministry of Education of Rwanda.

Cabus, S., Sok, S., Van Praet, L., & Heang, S. (2021). Impact of Gender-Responsive and Violence-Free School Environments on Primary and Lower Secondary School Children

Edwards, K., & Quinter, M. (2011). Factors influencing students career choices among secondary school students in Kisumu municipality, Kenya. Journal of emerging trends in educational research and policy studies, 2(2), 81-87.

Jahangir, A., & Mankani, N. (2016). Documentation of Gender Responsive Pedagogy as a Best Practice by the Forum for African Women Educationalists (FAWE).

Mwaa, A. (2016). Parental factors influencing career choice among high school students in Nairobi county (Doctoral dissertation, University of Nairobi).

Gender and Education: Evaluating Gender Mainstreaming Practices in Curriculum Implementation in Kenya

Darling-Hammond, L., & Youngs, P. (2002). Defining "highly qualified teachers": What does "scientifically-based research" actually tell us?. Educational researcher, 31(9), 13-25.

King, N., Dewey, C., & Borish, D. (2015). Determinants of Primary School Non-Enrollment and Absenteeism: Results from a Retrospective, Convergent Mixed Methods, Cohort Study in Rural Western Kenya. PloS One, 10(9), e0138362–e0138362. https://doi.org/10.1371/journal.pone.0138362o

Korir, E., Okwara, F. N., & Okumbe, G. (2018). Menstrual hygiene management practices among primary school girls from a pastoralist community in Kenya: a cross sectional survey. The Pan African Medical Journal, 31(222), 222–. https://doi.org/10.11604/pamj.2018.31.222.13521

Zulaika, G., Bulbarelli, M., Nyothach, E., van Eijk, A., Mason, L., Fwaya, E., Obor, D., Kwaro, D., Wang, D., Mehta, S. D., & Phillips-Howard, P. A. (2022). Impact of COVID-19 lockdowns on adolescent pregnancy and school dropout among secondary schoolgirls in Kenya. BMJ Global Health, 7(1), e007666–. https://doi.org/10.1136/bmjgh-2021-007666

12.   Appendix

Appendix I: Data Collection

Enumerator Recruitment

The recruitment of research assistants was conducted in June 2022 as per the APHRC procedures and policies, which included advertising for the positions, shortlisting candidates, and conducting interviews for successful candidates. As is the practice at APHRC, and to ensure fairness, priority was given to qualified applicants from the respective counties where the study was conducted. Sixty research assistants were recruited – 6 in every county. There was an equal representation of male and female research assistants from 60 hired.

Enumerator Training

All the research assistants participated in rigorous training conducted in Nairobi over five days (40 hours). APHRC researcher experts led the training. The training encompassed a general study overview, objectives, significance, research design, and data collection procedures. The participants were also trained on research ethics and were provided with a comprehensive review of the qualitative and quantitative data collection tools. The research assistants were required to demonstrate the ability to administer the quantitative surveys and the qualitative guides with high competence using the data collection tools (SurveyCTO). Therefore during training, the research assistants performed roleplays and mock interviews through administering the tools to their peers. Similarly, a small group of research assistants approximately, 25, were trained on classroom observation procedures, including completing the observation checklists and, filming the classroom, saving and uploading the data files. They practiced filming and generating high-quality videos. The data submitted during these mock trials were checked for consistency and reliability. Feedback was provided to the research assistants, and all the observed discrepancies were discussed. This process was also utilized to check for unclear survey items, which were also discussed and revised accordingly.

Pilot Study

The project team, including the research officers and the principal investigator, conducted the pilot data collection in Kajiado County and covered nine institutions. From the daily briefing meetings, adjustments were made to the tools in preparation for the larger data collection. The main data collection was conducted from August to October 2022.

Quality Checks

To ensure high-quality data collection, the research team conducted random spot checks weekly from the second week of data collection. During the spot checks, the research team visited the

schools where the data collection activities had been concluded. They re-administered the institutional questionnaires to the respondent who was interviewed by the researchers. They also re-adminstered the student questionnaire to at least three students who were interviewed and feedback relayed to the data collection team during the check-in meetings. An analysis of the spot check revealed that the accuracy of the student questionnaire was 94%, indicating that the survey had good precision. The accuracy rate of the institutional questionnaire was 75%, which was moderately good, though below our expectation, it was brought about by having about 30% of different individuals interviewed during the main survey and the spot check surveys.

Ethical Considerations

The National Council for Science, Technology, and Innovation Kenya approved data collection from the sampled schools per Kenya's legal and ethical requirements. Furthermore, the Kenya Medical Research Institute (KEMRI) provided an ethical review of the research through examination of the research protocol, the instruments, data collection procedures, ethical measures to ensure the privacy and confidentiality of the data as well as the process of obtaining consent from parents or guardians. In addition to this, we obtained permission to access basic education institutions from the Ministry of Education at the national level. Prior to the start of fieldwork activities, a meeting of the County Directors of Education from each of the target counties was convened in Nairobi, where these key education stakeholders were briefed on the study and their role in supporting research activities as well as validation and dissemination activities.

Data Management

Each of the 10 study sites had a field supervisor in charge of logistics, ensuring quality checks, and reporting back to the research team at APHRC. Furthermore, 5 of the project research team members at APHRC were in charge of the overall data collection in 2 counties each. They provided technical support and overall oversight of data collection and backstopping while in the field. The team leads also held weekly briefing sessions with the APHRC research team to share the progress of data collection and any challenges from the field

Appendix 2: Gender mainstreaming Compliance

Gender compliance indicator (Availability)	Scoring criteria
• Gender parity index (GPI)	1 = each school that had an index ranging from 0.96 to 1.04 0 = index below 0.96
• Mixed gender library set-up allocating	1 = mixed gender library use allocation

Gender and Education: Evaluating Gender Mainstreaming Practices in Curriculum Implementation in Kenya

	0 = no mixed gender library allocation
● Boys and girls toilets within the school compounds	1 = availability sepertate toilets for boys and girls toilets 0 = no seperate toilets for boys and girls
● Separate toilet doors/stances for boys and girls	1 = availability of seperate toilet stances for boys and girls 0 = no seperate toilet stances for boys and girls
● Functional bins for disposing sanitary towels for the students and teachers	1= availability of functional bins for disposing sanitary towels 0 = no sanitary bins
● Equal utilization of playground by boys and girls	1 = equal utilization 0 = one gender dominating the playground
● Headteacher gender parity	1= male headteacher and female deputy vice versa 0 = gender imbalance in school leadership
● Gender balanced student leadership	1= the proportion of one gender of the student leaders fell in the range of 40-60% 0 = the proportion of one gender of student leaders was above 70%
● Balanced BoM gender composition	1 = the proportion of one gender fell within 30-70% to incorporate the two-third gender rule 0 = disregard to the two-third gender rule
● Balanced gender parents association	1 = the proportion of one gender fell within 30-70% to incorporate the two-third gender rule 0 = disregard to the two-third gender rule
● BoM trained on gender issues	1 = BoM trained on gender issues 0 = Bom not trained on gender issues
● PA trained on gender issues	1 = PA trained on gender issues 0 = PA not trained on gender issues
● BoM discussed gender issues during meeting	1 = Gender issues discussed during BoM meetins 0 = Gender issues not discussed during BOM meetings
● Gender balance among heads of departments	1 = proportion of the number of heads of departments fell within 40-60%

Gender and Education: Evaluating Gender Mainstreaming Practices in Curriculum Implementation in Kenya

	0 = disregard to the two third gender rule
● QASO addressed gender issues during inspection	1 = QASO addressed gender issues 0 = QASO did not address gender issues
● Availability of guidelines on sexual harassment of students, teachers and non-teaching staff	1 = availability of guidelines 0 = guidelines not available
● PHO addressed gender issues	1 = PHO addressed gender issues 0 = PHO did not address gender issues

Appendix 3: Description of regression variables

Classroom observation checklist: – by using school and classroom checklists, enabled the research team to we collected information about *teacher's lesson preparation, available teaching materials and learning resources,* and *a classroom's physical environment*. For the **pre-lesson plans** we had 5 items such as schemes of work, record of work, lesson plan, and student's progressive records, which were measured in terms of availability (*1=Yes; 2=No; 3=Yes, but teacher could not show a copy*), we recoded the responses to (*0=No 1="Yes, but teacher could not show a copy" 2=Yes*) and subjected them to reliability test to assess internal consistency and then applied the PCA for dimension reduction procedures. In Primary school level, the items demonstrated a high level of internal consistency with a Cronbach alpha score of 0.86 and in PCA they all had good factor loading scores aligning to component 1 which explained 65% of variation, we thus predicted a score arising from this component and renamed it *lesson preparation*. In secondary school level, the Alpha score was 0.90 and the PCA indicated that the items explained a proportion of 71.9% of the total variation, a predicted score was obtained for use in the regression analysis.

Materials and resources were assessed in terms of visibility and use (*with responses 1=visible but not used in this lesson; 2=used in this lesson; 3=not visible but available; 4=not available*), which were recoded as follows (*1="Not available", 2="Not visible but available", 3="Visible but not used in this lesson", and 4 = "Used in this lesson"*). The examples of materials and resources observed were; *visual teaching aids, chalk boards, books, and student-made resources*. The Cronbach Alpha score for the primary school level data in four out of the seven items was 0.74 which was very good and these items explained a proportion of 57% of variation in PCA. In secondary school level, five out of the seven items revealed a Cronbach Alpha score of 0.74 a very good score and the PCA of three items with highest factor loadings explained 71.2% of total variation and these were applied in the score prediction.

Classroom physical environment was assessed by use of eight checklist items which included items such as *ventilation, natural lighting, noise, floor, writing surface, seating space, and cheerfulness*. In primary school level, the items had a high level of internal consistency (0.90) and were aligned to the first component of the PCA explaining 61.3% of the total variation. In secondary school level, seven out of the eight items provided an Alpha score of 0.70 and five out of the eight items aligned to the first component of the PCA explaining a proportion of variation of 56%.

Number of years school existed – number of years were computed as a difference between the survey year (2022) and the year of school's establishment.

School type- This is school's classification if it is public or private

Pupil Teacher Ratio – this is defined as the total number of pupils and students in the relevant level in a given academic year expressed as a percentage of the number of qualified teachers in the same level in that academic year ([UNESCO UIS.](#))

Library- refer to a dichotomous variable capturing if a school had a library (assigned 1=Yes) and if not (assigned 0=No)

School feeding - refer to a dichotomous variable capturing if a school had a school feeding programme (assigned 1=Yes) and if not (assigned 0=No)

Choice of subject: This referred to a question answered by students who were in Form 2 which asked about their preferred subject choices in Form 3 among the optional subjects, the subjects included sciences and humanities, i.e. Chemistry, Physics, Biology, History, and Geography.

Student attendance- this was obtained from checklist data obtained from schools where classroom observations were done. The checklist collected data regarding the students present in Grade 6 and Form 2 as well as the number of students absent.

Student's sex- This was student's sex either boy=1 or girl=2

Teacher's sex- This was teacher's sex either male=1 or female=2

Reasons for subject selection- this referred to a number of dichotomous questions asking the student's motivation to choose a certain optional subject.