


Gender Responsive Monitoring and Evaluation Process and Implementation of Competency-Based Education Programs in Public Primary Schools in Kisumu County, Kenya

Author(s): Linda Adhiambo Otieno¹ & Isaac Odhiambo-Abuya^{1,2} 

¹ Department of Management Science and Project Planning, University of Nairobi;

² Center for Policy Projects

2025: Vol 3(1), pp. 160-203

@The Author(s), 2025

Reprints and permissions:

The Regional Center for Project Management and Evaluation Training

eISSN 2958-9436

Received: 20/02/2025, Revised: 15/03/2025, Accepted: 02/04/2025



Copyright: © The Author(s), 2025. Published by The Regional Center for Project Management and Evaluation Training. This is an Open Access article, distributed under the terms of the Creative Commons Attribution 4.0 License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution and reproduction in any medium, provided the original work is properly cited.

Gender Responsive Monitoring and Evaluation Process and Implementation of Competency-Based Education Programs in Public Primary Schools in Kisumu County, Kenya

Linda Adhiambo Otieno¹ & Isaac- Odhiambo Abuya^{1,2}

¹*Department of Management Science and Project Planning, Faculty of Business and Management Sciences, University of Nairobi*

²*Center for Policy Projects*

ABSTRACT

Effective education policy implementation is crucial for achieving equitable and high-quality learning outcomes. This study examined the influence of gender-responsive monitoring and evaluation (M&E) processes on the implementation of competency-based education (CBE) programs in public primary schools in Kisumu County, Kenya. The research was guided by the need to address persistent gender disparities and implementation challenges within the education system. Adopting explanatory sequential mixed design, the study collected both quantitative and qualitative data. The target population consisted of 511 participants, including school administrators, teachers, and M&E coordinators. A sample of 226 participants was selected using stratified and purposive sampling techniques to ensure representation from different sub-counties. Data were gathered using self-administered questionnaires for teachers and administrators, and a key informant interview (KII) guide for education officials. The research instruments were validated through a pilot study in a neighboring county, achieving a Cronbach's alpha of 0.832. Data analysis employed descriptive statistics (frequencies, percentages, means, and standard deviations) and inferential statistics (Pearson correlation and multiple linear regression). Null hypothesis was tested at a 0.05 level of significance. The combined effect of all four gender responsive M&E practices on program implementation was found to be statistically significant ($p < 0.05$). The study concluded that incorporating gender-responsive M&E processes significantly enhances the implementation of CBE programs. The findings are expected to inform educational policymakers and practitioners on strategies to foster gender equity and improve program effectiveness within Kenya's education sector.

Keywords: Gender Responsive M&E, Implementation of Competency-Based Education Programs, Intersectionality theory, Inclusive Education

INTRODUCTION

The Kenyan government is committed to implementing its Competency-Based Curriculum (CBC) and Competency-Based Education and Training (CBET) across all educational levels to produce skilled, ethical citizens prepared for the 21st-century workforce (Jwan, 2022; Amutabi, 2019). This commitment involves a shift from rote learning to skill and competency development, with a focus on practical application, critical thinking, and holistic learner development through strategies such as teacher retraining and curriculum overhaul (Jwan, 2022; Amutabi, 2019).

The main goals of Kenya's Competency-Based Curriculum (CBC) are to produce well-rounded individuals with practical skills, values, and knowledge for national development and success in the 21st century, fostering creativity, critical thinking, collaboration, and digital literacy through a learner-centered approach with community involvement and competency-based assessments (Jwan, 2022; Amutabi, 2019).

Competency-based education (CBE) is an educational model where students advance by demonstrating proficiency in specific skills and knowledge, rather than by completing a set amount of time (Burnette, 2016; Oroszi, 2020; Johnstone & Soares, 2014). Key features include self-paced learning, personalized learning plans, flexible environments, and a focus on real-world, job-ready skills (Burnette, 2016; Oroszi, 2020; Johnstone & Soares, 2014). Distinct programs include the Competency-Based Curriculum (CBC) in Kenya, which emphasizes practical application and digital literacy, and models where students prove mastery through projects and assessments.

Concerns exist in Kenya regarding the poor implementation and potential for increased gender disparities within its Competency-Based Education (Ogembo, 2025; Gichurur, 2024; Ondieki, Kimani & Tanui, 2018). Challenges include inadequate teacher preparation, lack of learning resources, and unclear implementation processes, which are exacerbated by existing socio-cultural barriers like poverty and traditional beliefs that can disadvantage girls (Ogembo, 2025; Gichurur, 2024; Ondieki, Kimani & Tanui, 2018). While the CBE aims to equip students with relevant skills, these implementation issues can hinder its success and potentially deepen existing gender gaps in educational access and outcomes, particularly in Science, Technology, Engineering, and Mathematics (STEM) subjects (Ogembo, 2025; Gichurur, 2024; Ondieki, Kimani & Tanui, 2018).

Examining Competency-Based Education programs through a gender lens is necessary because, despite its positive intentions, implementation has been poor, leading to potential gender disparities in educational outcomes (Ghosh & Sankar, 2024; Johnson, 2021; Mandela, 2021). Insufficient teacher training, resource shortages, and the perpetuation of existing societal gender biases in classrooms risk undermining the CBC's goals of nurturing all students and correcting ingrained inequalities. Therefore, a gender-focused approach is crucial to identify and address these implementation challenges to ensure fair and equitable learning for boys and girls (Ghosh & Sankar, 2024; Johnson, 2021; Mandela, 2021).

Intersectionality theory serves as a suitable anchor theory for researching the influence of gender-responsive Monitoring and Evaluation (M&E) and the performance of competence-based education programs, because it recognizes how multiple social factors (like gender, race,

and class) create complex experiences of privilege and disadvantage, which is crucial for effective, nuanced M&E. Self-Determination Theory (SDT) and a Theory of Change are supportive theories, with SDT focusing on intrinsic motivation and psychological needs for engagement in education, and Theory of Change providing a framework for understanding the causal pathways of interventions and how gender is addressed within them.

Research Problem

The Kenyan government is committed to implementing its Competency-Based Curriculum (CBC) and Competency-Based Education and Training (CBET) across all educational levels to produce skilled, ethical citizens prepared for the 21st-century workforce (Jwan, 2022; Amutabi, 2019). This commitment involves a shift from rote learning to skill and competency development, with a focus on practical application, critical thinking, and holistic learner development through strategies such as teacher retraining and curriculum overhaul (Jwan, 2022; Amutabi, 2019).

Existing research confirms the Ministry of Education's implementation of the Competency-Based Education (CBE) programs in Kenyan primary schools but highlights significant challenges in its rollout, particularly in public schools, which face issues like inadequate teacher training and resource (Ogada, 2025; Midigo, 2025; Njue & Murungi, 2025; Warui, 2025). While CBE aims to equip learners with skills and is lauded for potential benefits like improved critical thinking, evidence suggests it might worsen gender disparities by exacerbating existing resource gaps between public and private schools. There is a research gap concerning how gender-responsive monitoring and evaluation (M&E) can mitigate these disparities and improve CBE implementation at the county level in Kenya (Ogada, 2025; Midigo, 2025; Njue & Murungi, 2025; Warui, 2025).

Moreover, research on Kenya's Competency-Based Curriculum (CBE) reveals existing gaps in theoretical understanding, conceptual clarity, contextual application, methodological implementation, and empirical evidence (Ogada, 2025; Midigo, 2025; Njue & Murungi, 2025; Warui, 2025), which this study aims to address. Challenges include the gap between the theoretical goal of CBC and its practical implementation, a lack of nuanced understanding of what "competency" means in the Kenyan context, difficulties in aligning pedagogical strategies with CBC principles, insufficient resources and teacher preparation, and a lack of robust evidence on its real-world impact on students and the system (Ogada, 2025; Midigo, 2025; Njue & Murungi, 2025; Warui, 2025).

Value of the Study

This research on the influence of gender-responsive M&E and the implementation of CBC in Kenya offers significant value for policy, theory, project management practice, and future research by highlighting successes, challenges, and lessons learned in achieving gender equity in the Kenya's education system.

This research informs the development of policies that promote gender equality, advances theories on how to integrate gender considerations into curriculum design and implementation, and suggests practical strategies for more effective and equitable delivery of CBE by addressing gender-specific barriers and opportunities. It also contributes to the evidence base for future research by identifying gaps, such as the impact of community learning activities within the CBE on reinforcing gender stereotypes, and providing a framework for further investigation into gender-responsive educational interventions.

REVIEW OF RELATED LITERATURE

Theoretical Foundation

Intersectionality theory serves as a suitable anchor theory for researching the influence of gender-responsive Monitoring and Evaluation (M&E) and the performance of competence-based education programs, because it recognizes how multiple social factors (like gender, race, and class) create complex experiences of privilege and disadvantage, which is crucial for effective, nuanced M&E. Self-Determination Theory (SDT) and a Theory of Change are supportive theories/ models, with SDT focusing on intrinsic motivation and psychological needs for engagement in education, and Theory of Change providing a framework for understanding the causal pathways of interventions and how gender is addressed within them.

Intersectionality Theory

Intersectionality theory recognizes that individuals hold multiple identities (such as race, gender, class, sexual orientation) which overlap and interact to create unique systems of discrimination and privilege, not just single, separate forms of oppression (Crenshaw, 2013; Crenshaw, 2015). Coined by legal scholar Kimberlé Crenshaw (Crenshaw, 2013; Crenshaw, 2015), it highlights how these overlapping social categorizations create interdependent systems of disadvantage, shaping distinct experiences and outcomes that are not the sum of individual oppressions. The theory moves beyond simplistic, single-axis understandings of inequality to reveal how intersecting power dynamics affect individuals and groups differently (Crenshaw, 2013; Crenshaw, 2015).

Key assumptions of intersectionality theory are: individuals belong to multiple social categories simultaneously, which are interconnected and create complex experiences of power and oppression (Liu, Shockley, Curry & Conley, 2025); social positions are not independent but reciprocally influence one another, leading to unique forms of disadvantage that cannot be understood by examining each social identity in isolation (Liu, Shockley, Curry & Conley, 2025); and power dynamics are embedded within these social categories, and analysis must acknowledge the specific social and historical contexts in which these interactions occur (Crenshaw, 2013; Crenshaw, 2015; Liu, Shockley, Curry & Conley, 2025).

Intersectionality is highly relevant to researching gender-responsive M&E and CBC implementation in Kenyan primary schools because it moves beyond a single-axis view of gender to acknowledge how other social attributes like ethnicity, socioeconomic status, or disability interact, creating unique experiences of inequality and marginalization for students. Applying intersectionality allows for the development of more inclusive M&E processes that capture diverse data and for the identification of how specific student groups are affected by the CBC, ensuring that M&E findings and subsequent program adjustments truly address the complex needs of all children in public primary schools, not just a broad gender category.

Self- Determination Theory

Self-Determination Theory (SDT) (Reeve, 2012; Wilson, Mack & Grattan, 2008; Liu, Wang & Wang, 2025) is a motivational theory explaining how people are intrinsically driven toward growth and personal fulfillment, contingent on meeting three basic psychological needs: autonomy (feeling in control of one's choices), competence (feeling capable and effective), and relatedness (feeling connected to others) (Reeve, 2012; Wilson, Mack & Grattan, 2008; Liu, Wang & Wang, 2025). Social environments can either support or thwart these needs,

influencing whether motivation is autonomous or controlled, which in turn affects psychological well-being and performance in areas like work, education, and health.

SDT assumes humans have innate needs for autonomy, competence, and relatedness (Reeve, 2012; Wilson, Mack & Grattan, 2008; Liu, Wang & Wang, 2025), which drive motivation and well-being, and that people are intrinsically motivated to grow and develop their sense of self. People actively seek environments and activities that support these basic needs, and their motivation for a given activity is influenced by the degree to which it fulfills them (Reeve, 2012; Wilson, Mack & Grattan, 2008; Liu, Wang & Wang, 2025).

SDT is relevant because it provides a framework for understanding how teachers' and students' intrinsic motivation and feelings of competence are affected by gender-responsive M&E processes and the implementation of CBC. By focusing on learners' core psychological needs for autonomy, competence, and relatedness, SDT can explain how such M&E processes influence motivation and engagement with CBC, promoting or hindering effective implementation.

Theory of Change

A theory of change (ToC) is a descriptive and explanatory framework that outlines the hypothesized causal pathway from program activities and interventions to long-term, desired impacts (Anderson, 2004; Taplin, Clark, Collins & Colby, 2013; Setioko & Wangsanata, 2025). It identifies the "how" and "why" behind expected change by mapping out the intermediate outcomes, conditions, and assumptions necessary to achieve a program's ultimate goals, serving as a blueprint for planning, monitoring, and evaluation by providing a shared understanding of how change will happen (Anderson, 2004; Taplin, Clark, Collins & Colby, 2013; Setioko & Wangsanata, 2025).

Key assumptions in a theory of change (ToC) are the underlying conditions, causal links, and contextual factors that must be true for an intervention to succeed and lead to its intended results (Anderson, 2004; Taplin, Clark, Collins & Colby, 2013; Setioko & Wangsanata, 2025). They can be categorized as causal assumptions (cause-and-effect relationships), contextual assumptions (external environmental factors), and operational assumptions (resource availability and stakeholder buy-in). Identifying and documenting these assumptions is crucial, as they highlight risks and provide the basis for testing and evaluating the program's logic (Anderson, 2004; Taplin, Clark, Collins & Colby, 2013; Setioko & Wangsanata, 2025).

A Theory of Change (ToC) is highly relevant theoretical model for researching the influence of gender-responsive M&E on CBC/CBE program implementation because it provides a structured framework to articulate assumptions about how the M&E process leads to desired changes in CBC/CBE implementation and outcomes, enabling a clear analysis of gender-differentiated impacts. By visually mapping the cause-and-effect pathways, and helps researchers to identify the specific gender-related interventions, demonstrate how M&E data informs improved practices, and analyze any unintended positive or negative gender consequences.

REVIEW OF RELATED LITERATURE

Gender Responsive M&E Planning

Gender-Responsive M&E Planning is a methodology that intentionally integrates gender equality considerations into the entire Monitoring and Evaluation (M&E) process (Kalbarczyk,

Krugman, Elnakib, Hazel, Luo, Malhotra & Morgan, 2025) to ensure that interventions effectively address the distinct needs, priorities, and experiences of people of all genders (Kalbarczyk, *et al*, 2025). This approach goes beyond simply collecting sex-disaggregated data, incorporating power relations and ensuring inclusive participation to promote equitable outcomes and hold programs accountable for achieving gender equality ((Kalbarczyk, *et al*, 2025).

Gender-responsive M&E planning intentionally incorporates the needs, rights, and power relations of different genders into the entire M&E process to promote gender equality (Jansen van Rensburg & Mapitsa, 2017; Duma, 2022; Wokadala, 2016; Famela, 2024). This involves collecting sex-disaggregated data, developing gender-inclusive indicators, analyzing findings with a gender lens, and using this information to drive equitable program outcomes, improve interventions, and advocate for broader social change (Jansen van Rensburg & Mapitsa, 2017; Duma, 2022; Wokadala, 2016; Famela, 2024).

Gender-responsive M&E planning (Atthill & Jha, 2009; Wigati, 2019; Abraha, Dagne & Seifu, 2019) is crucial for CBC/ CBE programs to ensure they are equitable and beneficial for all genders, as it involves integrating gender perspectives and data into the M&E framework to understand and address gender-specific needs, barriers, and power dynamics. By collecting and analyzing sex-disaggregated data and using gender-sensitive indicators, CBC/ CBE programs can identify disparities, foster inclusive learning environments, challenge stereotypes, and ensure that all students have equal opportunities to develop skills and achieve success in and beyond education. Gender-responsive M&E planning helps in identifying specific barriers that prevent either boys or girls from accessing and participating fully in education (Atthill & Jha, 2009; Wigati, 2019; Abraha, Dagne & Seifu, 2019).

Gender-responsive M&E planning (Kalbarczyk, *et al.*, 2025) is a crucial tool for assessing the school environment and identifying areas for improvement by intentionally integrating the specific needs, rights, and power dynamics of all genders into the M&E process (Kalbarczyk, *et al.*, 2025). This M&E approach allows for the collection of sex-disaggregated data and the analysis of gendered power relations, which helps to uncover specific barriers and discriminatory practices that may hinder the inclusion and equitable participation of girls, boys, and gender minority individuals in the school setting (Atthill & Jha, 2009; Wigati, 2019; Abraha, Dagne & Seifu, 2019).

Gender-responsive M&E planning is a crucial tool for tracking and comparing the learning progress of boys and girls separately, enabling the early identification of significant achievement gaps and other inequalities (Kalbarczyk, *et al.*, 2025). By collecting and analyzing sex-disaggregated data, programs can understand how interventions affect different genders, identify barriers to learning, and design targeted strategies to promote gender equality in education (Jansen van Rensburg & Mapitsa, 2017; Duma, 2022; Wokadala, 2016; Famela, 2024).

Gender-responsive M&E planning helps assess gender-responsive teaching practices by providing a framework to systematically collect, analyze, and interpret data that reveals how gender dynamics (Atthill & Jha, 2009; Wigati, 2019; Abraha, Dagne & Seifu, 2019) influence teaching and learning, thereby informing strategies to foster equitable educational environments for all learners. Gender-responsive M&E incorporates gender-disaggregated data and intersectional analysis to understand the experiences of girls, boys, and other gendered identities within the classroom. This goes beyond simple statistics to explore factors like

language use, classroom layout, teaching materials, and teacher-student interactions from a gender perspective (Jansen van Rensburg & Mapitsa, 2017; Duma, 2022; Wokadala, 2016; Famela, 2024).

Gender-responsive M&E planning (Atthill & Jha, 2009; Wigati, 2019; Abraha, Dagnew & Seifu, 2019) helps assess how gender stereotypes are perpetuated in schools by integrating gender considerations into the M&E process, collecting and analyzing sex-disaggregated data, and observing changes in the school environment, including teacher practices and student interactions, to identify and address inequalities (Atthill & Jha, 2009; Wigati, 2019; Abraha, Dagnew & Seifu, 2019). By systematically examining these aspects, schools can work towards creating more equitable and inclusive learning environments for all students.

Gender-responsive monitoring and evaluation (M&E) planning is a systematic process that integrates gender considerations into the design and implementation of programs and policies to foster gender equality (Kalbarczyk, et al., 2025). By considering the differing needs, rights, and opportunities of boys and girls, gender-responsive M&E helps challenge harmful gender stereotypes and norms (Jansen van Rensburg & Mapitsa, 2017; Duma, 2022; Wokadala, 2016; Famela, 2024). This approach empowers both genders to become active agents of change in their communities by ensuring programs contribute to equitable outcomes, such as greater economic security, enhanced health, and increased participation in decision-making.

Gender-responsive M&E planning provides a framework for accountability for promoting gender equality (Atthill & Jha, 2009; Wigati, 2019; Abraha, Dagnew & Seifu, 2019) in education is accurate. This approach intentionally integrates gender considerations into all aspects of monitoring and evaluation (M&E) processes, enabling stakeholders like teachers and administrators to be held accountable for ensuring that educational programs and activities achieve gender equity goals and address the diverse needs, rights, and experiences of girls, boys, and other gender identities (Lopez & Andal, 2024; Rarieya, Wango, Oluga & Abunga, 2024).

Gender-responsive M&E planning does provide a framework for ensuring accountability by collecting data that highlights how programs and policies affect different genders, enabling stakeholders to identify and address gender gaps (Kalbarczyk, et al., 2025) in education and hold responsible parties accountable for improving outcomes for all. It helps track progress, measure effectiveness, and adapt strategies to promote genuine gender equity within the education system (Kalbarczyk, et al., 2025).

Integrating gender considerations into M&E planning ensures equitable benefits (Kalbarczyk, et al., 2025) from CBC/CBE by collecting sex-disaggregated data, analyzing gender disparities, and adapting interventions to meet the diverse needs of all students, ultimately contributing to sustained, long-term outcomes for both girls and boys. This approach helps identify and address potential biases (Jansen van Rensburg & Mapitsa, 2017; Duma, 2022; Wokadala, 2016; Famela, 2024) in CBE implementation, prevents the perpetuation of existing inequalities, and promotes a more inclusive and effective learning environment.

Gender Responsive M&E Data Collection

Gender-responsive M&E data collection involves collecting and analyzing data that reveals the different ways a program or project impacts men, women, and gender minority individuals, considering their diverse needs, rights, and priorities (Kitada, Johannesen, Ojwala, Buckingham, Sun, Rodríguez-Chaves & Schofield, 2023). This process goes beyond simple

sex-disaggregated data to examine underlying gender power dynamics and social inequalities, aiming to ensure that interventions are equitable, effective, and lead to inclusive development outcomes (Kitada, et al., 2023).

Gender-responsive monitoring and evaluation (M&E) data collection is crucial for creating effective and equitable programs by ensuring that data is collected and analyzed to understand how different genders experience and are affected by interventions (Lopez & Andal, 2024; Rarieya, Wango, Oluga & Abunga, 2024). Its importance lies in its ability to identify gender-specific disparities, tailor interventions to diverse needs, improve project effectiveness and sustainability, strengthen accountability, and provide evidence for policy change, ultimately contributing to better outcomes for all beneficiaries, particularly marginalized groups (Lopez & Andal, 2024; Rarieya, Wango, Oluga & Abunga, 2024).

Gender-responsive data collection reveals disparities by disaggregating data by sex, highlighting differences in access to resources, infrastructure, and learning opportunities for boys and girls in schools (Kitada, Johannesen, Ojwala, Buckingham, Sun, Rodríguez-Chaves & Schofield, 2023). This analysis provides critical evidence to inform interventions and accelerate gender equality in education by identifying both disparities and the underlying gender-biased norms and practices that create them (Kitada, et al., 2023).

Gender-responsive data collection is a method used to gather specific information that identifies and addresses gender disparities in education (Cabus, Sok, Van Praet, & Heang, 2021; Ananga, 2021; Herut, Dube & Yimer, 2022), such as unequal participation rates in classroom activities, co-curricular activities, and leadership roles, which helps in developing strategies for a more equitable learning environment (Cabus, Sok, Van Praet, & Heang, 2021; Ananga, 2021; Herut, Dube & Yimer, 2022). This data, collected through various means, including classroom observations and surveys, highlights how social norms, biases, and pedagogical practices can affect the engagement of girls and boys, ultimately aiming to create a more inclusive and effective educational system (Kitada, et al., 2023).

Gender-responsive data collection is vital for equitable education by providing insights into specific barriers faced by different genders (Kitada, et al., 2023), such as girls' lower enrollment or boys' limited access to certain fields of study. Disaggregated data allows for targeted interventions, leading to policies that support all learners' needs, improve overall access, foster active participation (Kitada, et al., 2023) and ultimately lead to better learning outcomes for everyone, addressing systemic inequalities and promoting a more inclusive education system.

Gender-responsive data collection is a powerful tool for creating safer and more inclusive environments (Lopez & Andal, 2024; Rarieya, Wango, Oluga & Abunga, 2024), particularly in schools, by enabling the identification of gender-based violence, harassment, and bullying. Collecting data through this approach allows for targeted interventions that address the specific needs of different genders (Kitada, et al., 2023), fostering environments where all individuals can learn and thrive without fear. By collecting and analyzing data that disaggregates experiences by gender, institutions can identify patterns of violence, harassment, and bullying that might otherwise go unnoticed (Kitada, et al., 2023). The insights gained from this data can be used to develop and implement specific programs and policies designed to prevent and respond to these issues effectively.

Gender-responsive data collection is crucial for developing relevant, inclusive, and needs-based (Cabus, Sok, Van Praet, & Heang, 2021; Ananga, 2021; Herut, Dube & Yimer, 2022)

CBC/ CBE programs by providing disaggregated data to identify gender-specific learning gaps, inform curriculum design, and ensure fair participation. This process involves collecting and analyzing data that accounts for gender and other social factors (Cabus, Sok, Van Praet, & Heang, 2021; Ananga, 2021; Herut, Dube & Yimer, 2022), allowing for the creation of gender-responsive pedagogical approaches and teacher training, ultimately contributing to equitable learning outcomes for all students. Disaggregated data reveals how gender intersects with other social factors, showing how these affect learning experiences and highlighting areas where boys and girls have different needs or face different barriers in education (Kitada, et al., 2023).

Gender-responsive data collection helps identify specific teacher training needs by highlighting disparities and areas of concern in gender-sensitive pedagogy, curriculum delivery, and classroom management (Lopez & Andal, 2024; Rarieya, Wango, Oluga & Abunga, 2024), enabling targeted professional development to promote a more equitable and inclusive learning environment for all students. By systematically collecting and analyzing data on student experiences, participation, and outcomes through a gender lens (Kitada, et al., 2023), educators can pinpoint where gendered differences are occurring in the classroom. This data can reveal how gender norms might be influencing teacher behaviors, curriculum choices, and overall classroom dynamics, for example, which students are called on less often or which subjects are perceived as more suitable for one gender (Lopez & Andal, 2024; Rarieya, Wango, Oluga & Abunga, 2024).

Gender responsive data collection reveals varied differences (Lopez & Andal, 2024; Rarieya, Wango, Oluga & Abunga, 2024); while girls have shown improved literacy and numeracy in some regions, boys sometimes outperform them in overall scores and science subjects. Disparities also appear in extracurricular participation (Kitada, et al., 2023), with girls often needing more support to overcome disadvantages like domestic responsibilities that limit their participation and study time. Factors such as negative teacher attitudes, time management issues, and a lack of adequate facilities can influence these trends, highlighting the need for interventions that promote equitable access and support for both genders (Kitada, et al., 2023).

Gender-responsive data collection reveals specific barriers, such as cultural norms, economic constraints, and safety concerns (Cabus, Sok, Van Praet, & Heang, 2021; Ananga, 2021; Herut, Dube & Yimer, 2022) that affect girls' and boys' education, allowing for tailored strategies and policies to promote gender equality in educational systems. By disaggregating data by sex and other factors, these approaches provide nuanced insights into gender disparities and power dynamics (Lopez & Andal, 2024; Rarieya, Wango, Oluga & Abunga, 2024), informing program design, curriculum development, and pedagogical practices to create more equitable and inclusive learning environments. Data can highlight how traditional gender roles, such as those assigning girls domestic responsibilities, prevent them from attending school or participating fully in it. Gender-disaggregated data reveals how poverty disproportionately affects certain groups and intersects with gendered cultural practices, impacting access and outcomes for girls and boys alike (Lopez & Andal, 2024; Rarieya, Wango, Oluga & Abunga, 2024).

Gender-responsive data collection is crucial for tracking and measuring progress toward gender equality (Lopez & Andal, 2024; Rarieya, Wango, Oluga & Abunga, 2024) in education by allowing for disaggregated data by sex, identifying gender disparities, and evaluating the effectiveness of interventions aimed at promoting equal opportunities and outcomes for all (Cabus, Sok, Van Praet, & Heang, 2021; Ananga, 2021; Herut, Dube & Yimer, 2022) students within schools and the broader education system. This data enables informed policy-

making and resource allocation to address inequalities related to access, participation, and learning (Kitada, et al., 2023). Data is broken down by sex to reveal differences in educational experiences and outcomes between boys and girls. This allows for the identification of specific issues, such as lower enrollment rates for girls in certain subjects, disparities in learning experiences, or unequal progression rates through the education system (Kitada, et al., 2023).

Gender-responsive data collection is a method for gathering data disaggregated by sex and other characteristics, which informs the design of policies and budgets to ensure that resources are allocated equitably and benefit all genders (Lopez & Andal, 2024; Rarieya, Wango, Oluga & Abunga, 2024). This approach enables a deeper analysis of the unique challenges faced by women, men, and marginalized groups, allowing institutions to develop targeted interventions that promote gender equality and address specific needs (Kitada, et al., 2023).

Gender- Disaggregated M&E Data Analysis

Gender-disaggregated M&E data analysis is the process of collecting, analyzing, and interpreting monitoring and evaluation (M&E) data broken down by sex (or gender) to understand the different impacts of programs, policies, or projects on women, men, girls, and boys (Teranishi, Nguyen, Alcantar & Curammeng, 2020). This analysis reveals inequalities, highlights different needs, and provides evidence for designing targeted interventions to promote gender equality and empowerment. It involves collecting quantitative and qualitative data that is separated by sex, enabling a deeper understanding of how services, resources, and opportunities are accessed and utilized by different genders (Teranishi, Nguyen, Alcantar & Curammeng, 2020).

Gender-disaggregated M&E data analysis (Miletto, Pangare, Thuy & Piccione, 2021; Gales, Phillips, Pao, Dubray, Elizalde, Heidari & Carter, 2025) is essential for competency-based education (CBE) programs to identify and address gender-specific disparities in access, participation, and outcomes, ensuring programs are responsive to the diverse needs of all learners, promote gender equality, and improve overall program effectiveness and sustainability. This allows for targeted interventions, equitable resource allocation, and the development of gender-sensitive policies that prevent the perpetuation of harmful stereotypes and biases within the educational system (Miletto, Pangare, Thuy & Piccione, 2021; Gales, Phillips, Pao, Dubray, Elizalde, Heidari & Carter, 2025).

Gender-disaggregated data analysis is a powerful tool for revealing how different social norms, economic factors, and safety concerns (Teranishi, Nguyen, Alcantar & Curammeng, 2020) affect boys and girls in education, allowing policymakers and organizations to design targeted solutions to promote gender equality. This data goes beyond simple enrollment numbers to highlight specific obstacles and inform interventions that address the unique needs of each gender, ultimately aiming to close gender gaps (Teranishi, Nguyen, Alcantar & Curammeng, 2020) in learning and create more equitable educational systems.

Tracking monitoring and evaluation (M&E) data disaggregated by gender (enrollment, attendance, completion rates, and learning outcomes) is a crucial method for providing a clear picture of progress toward gender equality in education (Miletto, Pangare, Thuy & Piccione, 2021; Gales, Phillips, Pao, Dubray, Elizalde, Heidari & Carter, 2025). This approach allows for the identification of gender-specific barriers, the development of targeted interventions to address disparities, and the monitoring of long-term trends, ultimately contributing to a more equitable and just education system for all genders. By separating data for boys and girls, M&E systems can pinpoint specific areas where one gender is lagging in access, participation, or

achievement (Miletto, Pangare, Thuy & Piccione, 2021; Gales, Phillips, Pao, Dubray, Elizalde, Heidari & Carter, 2025).

Analyzing data by gender helps primary schools ensure Competency-Based Education (CBE) programs are inclusive by identifying different needs and outcomes between male and female learners (Teranishi, Nguyen, Alcantar & Curammeng, 2020). This approach allows schools to tailor teaching practices, provide equal access to resources, and implement gender-responsive strategies (Gales, Phillips, Pao, Dubray, Elizalde, Heidari & Carter, 2025) to guarantee all students benefit and feel supported, fostering a truly inclusive learning environment. A gender analysis reveals how boys and girls' access and benefit from educational programs differently, highlighting any gender-specific needs, priorities, or barriers (Treskon & Bright, 2017; Upadhaya & Sah, 2019). By understanding these gender-specific patterns, schools can design CBE curricula and activities that are relevant and accessible to both boys and girls, ensuring no one is left behind (Gales, Phillips, Pao, Dubray, Elizalde, Heidari & Carter, 2025).

Disaggregated data analysis helps ensure gender equity and inclusion (Gales, Phillips, Pao, Dubray, Elizalde, Heidari & Carter, 2025) in CBC/CBE programs by revealing specific needs, vulnerabilities, and capacities within different gender groups, allowing for the design of targeted interventions, equitable resource allocation, and effective monitoring of progress towards gender-responsive outcomes (Treskon & Bright, 2017; Upadhaya & Sah, 2019). By breaking down data by sex and other relevant factors, programs can address hidden inequalities, avoid perpetuating biases, and ensure that development initiatives benefit all individuals, not just the most visible groups. Disaggregating data by sex allows for a clear understanding of how different gender groups are affected by social and economic factors, enabling programs to be designed for their unique circumstances (Treskon & Bright, 2017; Upadhaya & Sah, 2019).

Disaggregated data analysis is crucial for monitoring gender parity because it breaks down data by categories like sex, age, and disability, revealing hidden inequalities that aggregated data would miss (Villegas, Entienza, Lonzaga, Medina & Oruga, 2025; Miralles-Cardona, Kitta & Cardona-Moltó, 2023). This granular information allows for a precise assessment of how initiatives are affecting different groups, enabling policymakers and program designers to create targeted, effective interventions that address specific gender gaps and accelerate progress towards genuine gender equality (Villegas, Entienza, Lonzaga, Medina & Oruga, 2025; Miralles-Cardona, Kitta & Cardona-Moltó, 2023). Unlike aggregated data, which can mask gender-specific issues within a larger dataset, disaggregated data provides a clearer, more accurate understanding of the different experiences and challenges faced by women, men, girls, and boys (Treskon & Bright, 2017; Upadhaya & Sah, 2019).

Disaggregated data analysis does lead to better resource allocation, more efficient interventions, and improved learning outcomes by revealing inequalities and specific needs that would be hidden in aggregated data, allowing educators and policymakers to target support where it's most needed (Treskon & Bright, 2017; Upadhaya & Sah, 2019). By breaking down data into detailed sub-categories like gender or background, organizations can understand differential impacts, tailor interventions, and ensure that resources are used to equitably benefit all students, especially those who are vulnerable. Aggregated data lumps together statistics, masking individual or group differences (Villegas, Entienza, Lonzaga, Medina & Oruga, 2025; Miralles-Cardona, Kitta & Cardona-Moltó, 2023). Disaggregated data breaks this down, showing, for example, how boys and girls, or students from different socioeconomic backgrounds, perform differently on a given subject.

Disaggregated data analysis is a critical mechanism for holding the Ministry of Education and other stakeholders accountable for addressing gender disparities in education because it provides evidence-based insights into specific gaps and successes, enabling targeted interventions and the monitoring of progress toward gender equality (Thabiti, Mwandilawa & Basela, 2024). This type of data allows for transparency, showing where and for whom disparities exist, thus compelling action from policymakers and development partners. Disaggregated data, which separates statistics by sex and other variables, highlights exactly where and how gender disparities manifest in education (Villegas, Entienza, Lonzaga, Medina & Oruga, 2025; Miralles-Cardona, Kitta & Cardona-Moltó, 2023). For instance, the data might show a lower enrollment rate for girls in a particular region or among a specific socioeconomic group.

Disaggregated data analysis is crucial for promoting gender equity and inclusion in CBE (Community-Based Education) programs because it reveals how different genders (and other groups) are affected by or participate in these programs, allowing for a deeper understanding of disparities (Thabiti, Mwandilawa & Basela, 2024). This enables the design of more targeted, inclusive interventions and policies that address specific needs, improve resource allocation, and ensure that all participants benefit, preventing systemic biases from being perpetuated in the long run (Villegas, Entienza, Lonzaga, Medina & Oruga, 2025; Miralles-Cardona, Kitta & Cardona-Moltó, 2023).

Gender Responsive Utilization of M&E Findings

Gender-responsive utilization of Monitoring & Evaluation (M&E) findings involves using data that considers the different needs (Lachat & Smith, 2005; Wayman & Stringfield, 2006, rights, preferences, and power dynamics of women, men, and gender minority individuals to improve program effectiveness and equity (Amran, Bahry, Anwar & Yu, 2016). This requires collecting and analyzing sex- or gender-disaggregated data, incorporating specific gender equality objectives and indicators (Amran, Bahry, Anwar & Yu, 2016; Fujiwara & Hagino, 2022) and ensuring all M&E processes actively address gender-based disparities to achieve more equitable outcomes. Collecting and using data separated by sex, age, and other relevant variables to understand the different experiences and impacts of a program on various gender groups (Lachat & Smith, 2005; Wayman & Stringfield, 2006).

Gender-responsive utilization of M&E findings is crucial because it helps identify and address gender-specific disparities in programs and policies (Amran, Bahry, Anwar & Yu, 2016; Fujiwara & Hagino, 2022), leading to more effective, equitable, and sustainable outcomes. By integrating a gender lens into monitoring and evaluation, organizations can understand unique needs, create targeted interventions, promote women's empowerment, improve resource allocation (Leveraging, 2017; Sathyan & Sam, 2022), and hold programs accountable for achieving gender equality for all. By adapting strategies based on gender-disaggregated data, programs can better meet the diverse needs and realities of all genders (Amran, Bahry, Anwar & Yu, 2016), leading to improved outcomes and more efficient resource use (Leveraging, 2017; Sathyan & Sam, 2022).

Using gender-responsive monitoring and evaluation (M&E) findings allows schools to design tailored interventions by identifying and addressing unique gender-based challenges and needs among students (Esariti & Sabana, 2019; Bosco, Alegana, Bird, Pezzulo, Bengtsson, Sorichetta & Tatem, 2017), leading to more equitable access to resources, opportunities, and learning outcomes. This approach involves an intersectional analysis that considers other factors like age, disability, and socioeconomic status alongside gender, ensuring that interventions are

inclusive and effective for all students (Esariti & Sabana, 2019; Bosco, Alegana, Bird, Pezzulo, Bengtsson, Sorichetta & Tatem, 2017). Findings can show how gender interacts with other characteristics (like race, ethnicity, or disability) to create unique barriers for certain groups of students (Amran, Bahry, Anwar & Yu, 2016), requiring even more specific solutions (Leveraging, 2017; Sathyan & Sam, 2022).

Using gender-responsive Monitoring and Evaluation (M&E) findings is a crucial method to develop and implement gender-sensitive policies (Teranishi, Nguyen, Alcantar & Curammeng, 2020; Dorimé-Williams, 2023; Kohlhaas & Chu, 2010) by revealing how interventions impact different genders, promoting equitable practices, and ultimately fostering fairer and more sustainable development at all levels of governance (Sathyan & Sam, 2022; Richter & Brorsen, 2006). Gender-responsive M&E incorporates sex-disaggregated data and gender analysis to understand diverse needs and outcomes, ensuring that policies address these differences effectively (Teranishi, Nguyen, Alcantar & Curammeng, 2020; Dorimé-Williams, 2023; Kohlhaas & Chu, 2010). Findings from this analysis directly inform the creation of new or modified policies and programs that are designed to be gender-sensitive (Leveraging, 2017; Sathyan & Sam, 2022).

Using a gender-responsive approach to Monitor and Evaluate (M&E) findings is a crucial way to identify specific barriers that affect different genders (Leveraging, 2017; Sathyan & Sam, 2022) at the school, community, and system levels. By collecting and analyzing sex-disaggregated data and considering gendered experiences and needs (Sathyan & Sam, 2022; Richter & Brorsen, 2006), M&E can highlight disparities in access, participation, and outcomes (Leveraging, 2017; Sathyan & Sam, 2022), revealing the specific challenges that perpetuate gender inequality within a given context. Instead of just looking at overall progress, a gender-responsive analysis evaluates progress towards gender-related goals and assesses how processes, activities, outputs, and outcomes affect different genders (Esariti & Sabana, 2019; Bosco, Alegana, Bird, Pezzulo, Bengtsson, Sorichetta & Tatem, 2017).

Gender Responsive Monitoring and Evaluation (M&E) can reveal gender biases in classroom interactions, such as unequal participation and differential treatment of boys and girls. By analyzing M&E findings through a gender lens (Esariti & Sabana, 2019; Bosco, Alegana, Bird, Pezzulo, Bengtsson, Sorichetta & Tatem, 2017), educators can identify specific issues like teachers calling on boys more often, giving them more complex questions, providing longer wait-times, or interacting with girls on less academic topics, which collectively create an inequitable learning environment (Leveraging, 2017; Sathyan & Sam, 2022). By recognizing and addressing these biases, schools can create more equitable and inclusive learning environments for all students (Leveraging, 2017; Sathyan & Sam, 2022).

Using monitoring and evaluation (M&E) findings in a gender-responsive way directly informs and improves the implementation of gender-sensitive teaching methods by providing evidence on what works and where gender disparities exist in education (Esariti & Sabana, 2019; Bosco, Alegana, Bird, Pezzulo, Bengtsson, Sorichetta & Tatem, 2017). This feedback loop allows educators and program designers to adapt teaching approaches, materials, and classroom environments to be more inclusive, address the specific needs of different genders, and ultimately promote greater gender equality (Leveraging, 2017; Sathyan & Sam, 2022). In learning outcomes (Leveraging, 2017; Sathyan & Sam, 2022). By examining M&E findings, educators can pinpoint which teaching methods are not working equitably for all students. For example, if data shows boys are more active in discussions than girls, it signals a need to adjust teaching strategies to encourage greater female participation (Leveraging, 2017; Sathyan &

Sam, 2022).

Gender-responsive monitoring and evaluation (M&E) can reveal disparities in resource access, such as learning materials or technology (Esariti & Sabana, 2019; Bosco, Alegana, Bird, Pezzulo, Bengtsson, Sorichetta & Tatem, 2017), thereby enabling schools to implement equitable resource allocation. By incorporating a gender lens, M&E processes can collect and analyze data disaggregated by sex and gender, highlighting the different needs and experiences of boys and girls. This information allows for targeted interventions to address inequities and ensure that all students have equal opportunities to succeed, leading to more equitable educational outcomes (Esariti & Sabana, 2019; Bosco, Alegana, Bird, Pezzulo, Bengtsson, Sorichetta & Tatem, 2017).

Incorporating a gender-responsive approach into the utilization of monitoring and evaluation (M&E) findings can lead to improved academic performance, increased student engagement, and better overall well-being for both boys and girls by providing insights into gender-specific needs, addressing inequalities, and promoting fair access to education (Teranishi, Nguyen, Alcantar & Curammeng, 2020; Dorimé-Williams, 2023; Kohlhaas & Chu, 2010). A gender-responsive M&E framework collects sex-disaggregated data and analyzes it to inform strategies that actively promote gender equality and equity within the education system.

Integrating a gender perspective into the evaluation, monitoring, and utilization of findings (M&E) is crucial for promoting gender equality (Leveraging, 2017; Sathyan & Sam, 2022) in education by improving accountability for educators and administrators. This gender-responsive approach focuses on understanding diverse needs (Amran, Bahry, Anwar & Yu, 2016), identifying specific challenges, and holding stakeholders accountable through transparent practices that ensure interventions benefit all students equitably (Leveraging, 2017; Sathyan & Sam, 2022).. Gender-responsive M&E collects and analyzes data disaggregated by gender, and other social categories like age, ethnicity, and disability (Leveraging, 2017; Sathyan & Sam, 2022). This reveals specific disparities and inequalities that might otherwise be hidden, allowing for targeted interventions (Leveraging, 2017; Sathyan & Sam, 2022).

Gender-responsive utilization of Monitoring and Evaluation (M&E) findings can contribute to long-term and sustainable improvements (Leveraging, 2017; Sathyan & Sam, 2022) in educational outcomes for all students by revealing how gender impacts access, participation, and success in education (Dorimé-Williams, 2023; Kohlhaas & Chu, 2010). By using sex-disaggregated data, an intersectional lens, and gender-specific indicators in M&E, educators and policymakers can identify and address the diverse needs, barriers, and power imbalances affecting different groups (Dorimé-Williams, 2023; Kohlhaas & Chu, 2010) of students, leading to more effective, equitable, and inclusive educational programs and policies.

Implementation of Competence Based Education Programs in Public Primary Schools

The implementation of Competence-Based Education (CBE) programs refers to the systematic process of integrating and applying a teaching and learning framework that prioritizes the demonstration of specific skills, knowledge, and abilities (competencies) over rote memorization or time-based progression (Christopher & Jones, 2025; Oguta, 2025; Magassouba & Ishizaka, 2025). It involves a shift from traditional methods to student-centered approaches where learners advance upon achieving mastery of a competency at their own pace, using personalized learning paths, continuous assessment, and real-world scenarios to foster practical application and the development of key skills like critical thinking, collaboration, and problem-solving (Muthoka & Mbirithi, 2025; Mwereria, Thinguri & Muigai, 2025).

Implementing competence-based education in primary schools is vital because it produces lifelong learners (Warui, 2025; Owuor, 2022; Rwezaura, 2016; Hayat & Adiyono, 2025), equipping them with real-world skills and critical thinking abilities needed for a changing world (Rwezaura, 2016; Hayat & Adiyono, 2025; Cyprian, Chikuvadze, Young, Daimond & Claretah, 2025). CBE fosters deeper engagement by making learning relevant, promotes holistic development beyond academics, and ensures students are prepared for tertiary education and the workforce. It also empowers educators through accurate assessments and supports learner-centred, individualized learning experiences (Cyprian, Chikuvadze, Young, Daimond & Claretah, 2025).

The implementation of Competency-based Education programs in primary schools is affected by several factors (Kailo, Njagi, Kalai, & Mutegi, 2025; Muthoka & Mbirithi, 2025; Mwereria, Thinguri & Muigai, 2025), including inadequate resources and infrastructure, a shortage of trained and motivated teachers, lack of continuous professional development for educators, and insufficient funding (Christopher & Jones, 2025). Other factors include negative teacher attitudes towards the new curriculum, the quality and availability of instructional materials, and the overall inadequacy of physical facilities in many schools (Warui, 2025; Owuor, 2022; Rwezaura, 2016; Hayat & Adiyono, 2025).

Teachers often struggle to adopt Competency-Based Education (Muthoka & Mbirithi 2025; Magassouba & Ishizaka, 2025) because their traditional, teacher-centered training makes it difficult to shift to a learner-centered model (Rwezaura, 2016; Hayat & Adiyono, 2025,) which requires relinquishing classroom authority, embracing students' autonomy and diversity, and facilitating rather than lecturing. Challenges include a lack of pedagogical expertise (Mauti, Moindi & Masagara, 2025; DuLany, 2025), inadequate resources, time constraints due to hands-on activities, and the burden of managing large class sizes. Successfully transitioning to CBE demands ongoing professional development and support to cultivate a new mindset and skillset in teachers (Little, 2025; Chad, 2025; Ogada, 2025).

Teachers' adaptation to Competency-Based Education is often hindered by their long-standing use of traditional, teacher-centered methods and a lack of adequate training in CBE's learner-centered approach and assessment practices (Kailo, Njagi, Kalai & Mutegi, 2025; Christopher & Jones, 2025). This shift requires a significant change in pedagogical methodologies, curriculum design, and assessment, which can be challenging for educators accustomed to directive instruction (Mauti, Moindi & Masagara, 2025; DuLany, 2025). Insufficient training and a resistance to new methods can negatively impact the effective implementation of CBE's goals. Many teachers are comfortable with teacher-centered models, where they deliver information, and find it difficult to transition to a learner-centered approach where the student drives their own learning (Mauti, Moindi & Masagara, 2025; DuLany, 2025).

The successful implementation Of CBE relies on the involvement and support of key stakeholders, including teachers, parents, school administrators, and education officials (Mani, 2025; Mustofa, Dara & Sok, 2025). These stakeholders influence the adoption and effectiveness of the system through their participation, collaboration, and engagement, (Mani, 2025; Mustofa, Dara & Sok, 2025) which helps to align the curriculum with societal needs and address challenges in the implementation process (Owuor, 2022; Rwezaura, 2016; Hayat & Adiyono, 2025).

Government underfunding directly limits CBE implementation (Warui, 2025; Owuor, 2022;

Rwezaura, 2016; Hayat & Adiyono, 2025), by causing resource scarcity, such as a lack of learning materials and inadequate infrastructure, which hinders the ability of educational institutions to effectively deliver on CBE's unique requirements for community engagement and tailored curricula (Mauti, Moindi & Masagara, 2025; DuLany, 2025). This lack of financial support can also result in insufficient institutional commitment and a shortage of trained staff needed to manage CBE initiatives, ultimately undermining the program's goals. Without adequate funds, schools lack the necessary books, equipment, and other resources to support community-focused learning activities (Mauti, Moindi & Masagara, 2025; DuLany, 2025).

There is a recognized challenge where CBE relies heavily on technology (Ayalew, Getahun & Negasi, 2025; Asad & Qureshi, 2025), but teachers often lack adequate ICT skills for effective integration, leading to implementation barriers. (Filiz, Kaya & Adiguzel, 2025; Charles & Alshamsi, 2025) This issue stems from factors like limited or inconsistent training, poor ICT infrastructure, and insufficient ongoing support for teachers, which hinders their ability to use digital tools effectively in the classroom. Bridging this gap requires targeted investment in teacher training, equitable access to ICT resources, and ongoing professional development to build teacher confidence and competence in technology integration (Filiz, Kaya & Adiguzel, 2025; Charles & Alshamsi, 2025).

Unclear Competency-based Education policies and guidelines (Mustofa, Dara & Sok, 2025; Soto & Escorza, 2025) lead to confusion, inconsistent implementation, and challenges for teachers, administrators, and students by creating a lack of direction in curriculum delivery, assessment, and support for diverse learners (Mustofa, Dara & Sok, 2025; Soto & Escorza, 2025). This ambiguity results in difficulties in preparing teaching plans, maintaining standards, and effectively supporting students, particularly those with special needs. Teachers may lack a clear understanding of their responsibilities, assessment methods, and how to adapt the curriculum to meet various student needs, including inclusive education practices (Mauti, Moindi & Masagara, 2025; DuLany, 2025).. Without clear guidelines, there is no standardized approach to delivering content, conducting assessments, or providing support, leading to varied practices across different schools or classrooms (Mauti, Moindi & Masagara, 2025; DuLany, 2025).

Poor infrastructure like inadequate classrooms and unreliable internet severely hinders Competency-Based Education (CBE) by creating a physical and technological environment unsuitable for the practical, skill-focused learning CBE requires (Mauti, Moindi & Masagara, 2025; DuLany, 2025). Overcrowded classrooms impede effective teaching, while poor connectivity limits access to online resources and ICT tools, which are vital for delivering modern, skills-based education. Addressing these infrastructure deficits is crucial for successfully implementing CBE, particularly in resource-scarce regions, and ensuring students acquire essential real-world skills (Mustofa, Dara & Sok, 2025; Soto & Escorza, 2025). CBE emphasizes practical application of knowledge and skills, which requires appropriate learning spaces and resources to facilitate hands-on activities and project-based learning. Disparities in infrastructure often mean that students in rural or under-resourced areas lack the same opportunities as their peers, creating uneven implementation of CBE principles (Mani, 2025; Mustofa, Dara & Sok, 2025).

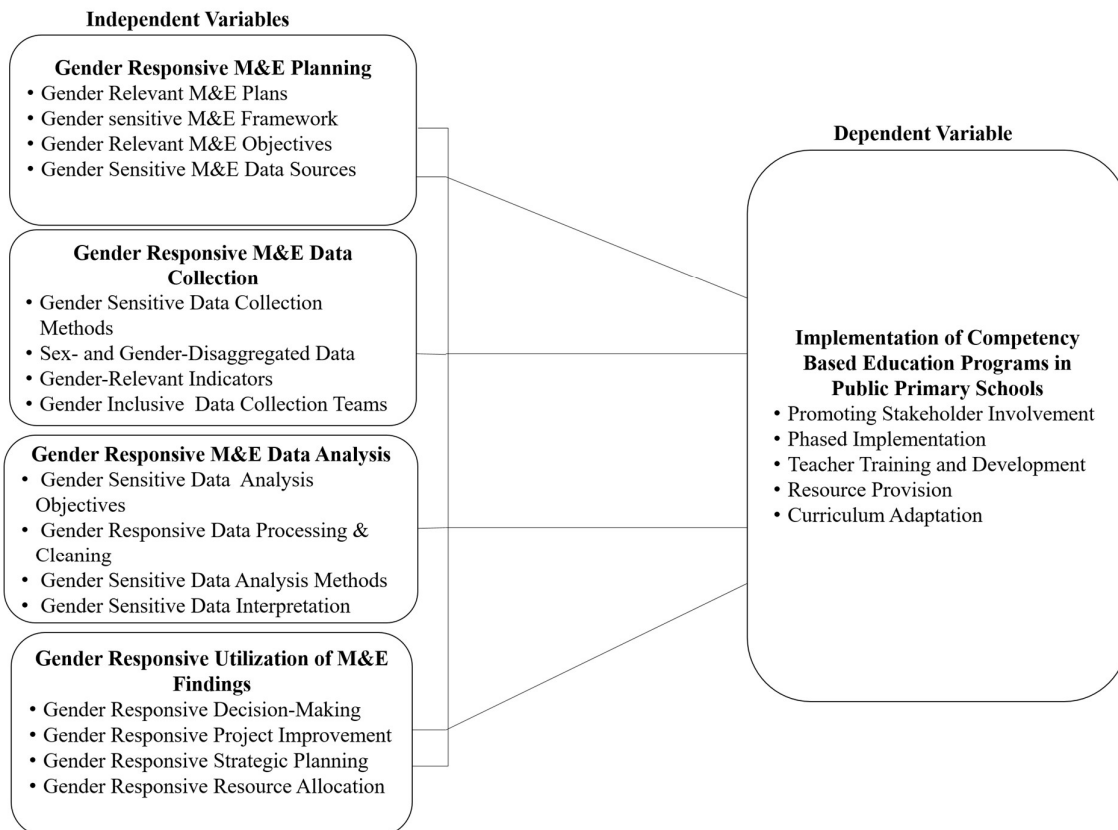
Some schools rely on traditional, high-stakes summative assessments, like end-of-term exams, which assess learning at the end of a period (Sahito, Khoso & Kerio, 2025; Walkup, 2025), rather than the continuous feedback and learning support provided by formative assessments central to competency-based education (CBE). This reliance on end-of-unit testing hinders

personalized learning and timely intervention, as formative assessments are designed to identify learning gaps and misconceptions during the learning process itself to help students improve (Sahito, Khoso & Kerio, 2025; Walkup, 2025). A shift towards CBE requires integrating formative assessment for ongoing feedback and personalized support, even within the context of summative evaluation, to foster growth and understanding rather than just final grades (Mustofa, Dara & Sok, 2025; Soto & Escorza, 2025).

Shifting to competency-based assessment (CBA) necessitates a fundamental change in how educators and organizations view learning (Mustofa, Dara & Sok, 2025; Soto & Escorza, 2025, moving from knowledge memorization to skill application and practical ability. This paradigm shift requires developing new assessment tools, such as performance tasks and digital portfolios, and fostering new practices like continuous feedback and aligning assessments directly with defined competencies Mauti, Moindi & Masagara, 2025; DuLany, 2025). The goal is to ensure learners can actually do what they have learned, rather than just demonstrating recall of information, thereby preparing them for real-world challenges and fostering lifelong learning Owuor, 2022; Rwezaura, 2016; Hayat & Adiyono, 2025).

Conceptual Framework

Figure 1: Conceptual Framework



METHODOLOGY

This section presents the research philosophy, design, population of study, sample Size and

sampling methods, data collection instruments, validity and reliability of data collection instruments, operationalization of study variables, and data analysis methods.

Research Philosophy

This study is grounded on Positivism (Dulal, 2025). Positivism is a research philosophy asserting that genuine knowledge comes from empirical observations and is best obtained through scientific methods, focusing on measurable and observable data to discover objective truths and establish general laws. It holds that a single, objective reality exists and can be understood by systematically collecting and analyzing data, particularly quantitative data, to verify theories. This framework promotes objectivity and the application of scientific principles to social phenomena, similar to how natural scientists study natural phenomena (Dulal, 2025). Positivism research is relevant for studying the influence of gender-responsive M&E on Competency-Based Education (CBE) in Kenyan public primary schools because it can establish cause-and-effect relationships through measurable, empirical data to assess the impact of interventions on student outcomes and teacher practices. This approach allows for the quantification of gender disparities in education and the effectiveness of gender-responsive M&E in promoting equitable implementation of CBE, providing objective evidence to inform policy and practice.

Research Design

An explanatory sequential mixed methods design (Ivankova, Creswell & Stick, 2006) was used in this study, where the researcher first collected and analyzed quantitative data on how gender responsive monitoring and evaluation influences the implementation of competency-based education programs, and then followed up with a qualitative phase to further understand the "how" and "why" behind the quantitative findings by gathering detailed qualitative data from participants to provide context and elaboration.

Population of Study

The target population for this study were 511 registered public primary schools in Kisumu County.

Sample Size and Sampling Methods

This researcher gathered data from 226 public primary schools out of a total of 511 in Kisumu County, using the Krejcie and Morgan Table to determine this sample size. A combination of simple random sampling, stratified sampling, and purposive sampling were employed. The stratified approach was used to ensure representation across diverse school categories and locations, while purposive sampling targeted specific schools or types of schools.

Data Collection Instruments

This research design combined quantitative surveys delivered through WhatsApp with qualitative interviews conducted on the same platform, offering a well-rounded approach to data collection by capturing both structured, measurable data from a large sample size (via the questionnaire) and detailed, contextualized insights from individual interviews, all while leveraging the convenience and familiarity of WhatsApp for participants.

Pilot Testing of Instruments

Pilot testing was conducted in one of the neighboring Homabay County. Ten percent of the sample size was allocated for pilot testing. Stangor (2011) recommends that a pre-test sample of a tenth of the total sample with homogenous characteristic is appropriate for a pilot study. Since the total sample size for this study was 226, 22 questionnaires

equivalent to 10% of the total population sample was used for pilot study. The results of the pilot test informed necessary adjustments, such as refining unclear perception statements and instructions, eliminating irrelevant questions, adding new and more targeted statements, and moderating language.

Validity of Data Collection Instruments

To establish content validity, two specialists in the area of study who are the research supervisors from the University of Nairobi were given the instruments to examine the instrument's items relevance and consistence to the objectives by rating each item on a scale of very relevant (4), relevant (3), somewhat relevant (2), and not relevant (1). Content Validity Index (CVI) was used to determine validity.

$$CVI = \frac{\text{Sum of item rated 3 or 4}}{\text{Number of Questionnaire items}}$$

CVI= Items rated 3 or 4 by both experts divided by the total number of items in the questionnaire. The results summarized in Table 1.1 were obtained.

Table 1.1: Experts Rating of Instruments

		Supervisor I				
		1	2	3	4	Total
Supervisor II	1	0	0	0	0	0
	2	1	4	0	0	5
	3	1	0	5	11	17
	4	1	1	13	13	28
Total		3	5	18	24	50

Table 1.1 shows that validity index: $CVI = (18+24)/50 = 0.840$, which is acceptable since it was more than the threshold of 0.7 recommended by Cohen and Swerdlik (2010). Hence out of any ten items used in this study, at least seven of them measured what they were intended to measure. Construct validity was evaluated by examining whether a consistent significant proportion of high scores in items investigating independent variables correlated positively or negatively with scores in items investigating the dependent variable. This was done by comparing several scores from different subjects.

Reliability of the Research Instruments

The reliability of the research instruments was established to ensure their consistency in yielding similar results when repeatedly applied to the same target population. A pilot study was conducted to confirm this reliability. The stability of the instruments over time was determined using a pre-test reliability method. Subsequently, a re-test was performed on the corrected questionnaire to ensure it met the recommended reliability threshold of $\alpha \geq 0.70$, as suggested by Cronbach and Azuma (1962), before being used in the main study.

The study utilized Cronbach's alpha coefficient to assess the reliability of the rating-scaled questionnaire. Items were carefully reviewed and deleted as necessary to maximize their reliability coefficient. The resulting coefficients were then compared against a threshold of $\alpha \geq 0.70$, which is the recommended coefficient test for reliability according to Cohen and Swerdlick (2010). The reliability output results are presented in Table 1.2.

Table 1.2: Reliability output results

Scale	No. of Items	Alpha
-------	--------------	-------

Gender Responsive M&E Planning of CBE Programs	10	0.806
Gender Responsive Data Collection of CBE Programs	10	0.799
Gender- Disaggregated M&E Data Analysis	10	0.891
Gender responsive Utilization M&E Findings	10	0.774
Implementation of <i>Competency-based</i> Education Programs	10	0.892
Overall	50	0.832

The reliability of the research instruments was a crucial step to ensure the study's findings were consistent and trustworthy. A pilot study was conducted to confirm that the questionnaires would produce stable results if administered multiple times. The study used Cronbach's alpha coefficient to measure internal consistency, which determines how closely related a set of items are as a group. A Cronbach's alpha of 0.70 or higher is generally considered acceptable for research purposes.

As shown in Table 1.2, the reliability analysis yielded strong results across all scales. The overall Cronbach's alpha was 0.835, which is well above the 0.70 threshold. This indicates a high level of reliability for the entire instrument, which comprised a total of 50 items. The consistently high alpha values across all scales confirm that the research instruments were reliable and suitable for data collection in this study on the implementation of school-based peace education programs.

Data Analysis Techniques

This study employed descriptive and inferential statistics to analyze data. Descriptive statistics involved quantitative and qualitative data analysis while inferential statistics involved testing of research hypotheses using correlation and regression analysis. These are further explained in detail in the following sub-sequent sub-themes:

Descriptive Statistics

Descriptive statistics describes and summarizes data into distribution of scores or measurements such as measures of central tendency, measures of dispersion, frequencies and percentages and tables.

In quantitative data, the data was collected on each independent variable and dependent variable which are the subject of investigation. It contained a total of 52 items comprising of 2 items in the demographic characteristics section and each of the 5 variables having 10 items structured to generate Likert response options measured on a 5-point ordinal scale ranging from the lowest score “1” strongly disagree (SD) to the highest score “5” strongly agree (SA)

In qualitative data, the data from interview guide was recorded appropriately for further processing based on themes. Responses were coded and analyzed for themes and compared to the variables to validate quantitative results. Data was summarized into daily briefs after each interview sessions. This was followed by description of the responses to produce an interim report on areas that require additional information and requisite data sourced for systematic analysis and interpretation.

Inferential Statistics

Pearson correlation co-efficient was used to test relationship between the independent variables and dependent variable, in order to reject or fail to reject the null hypothesis. The null hypotheses were tested for significance at $\alpha=0.05$ significance level. Sekaran’s (2006) decision criterion, according to which the Null Hypothesis is to be rejected is if P-value < 0.05; or otherwise, it is accepted. Using the Pearson correlation p-values under 2-tailed, the following hypothesis was tested:

Hypothesis: Combined Gender-Responsive M&E Processes

Hypothesis: There is no significant influence of the combined gender-responsive M&E processes on the implementation of competency-based education programs in public primary schools in Kisumu County, Kenya.

Model: This is a multiple linear regression model.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \epsilon$$

- Y = Implementation of Competency-Based Education Programs
- X1 = Gender-Responsive M&E Planning
- X2 = Gender-Responsive M&E Data Collection
- X3 = Gender-Responsive M&E Data Analysis
- X4 = Gender-Responsive Utilization of M&E Findings

Table 1.3: Summary of Hypothesis Testing

Objective	Hypothesis	Analytical Models	Interpretation
To establish the influence of the combined gender-responsive M&E processes on the implementation of competency-based education programs in public primary schools in Kisumu County, Kenya.	H ₀ : There is no significant influence of the combined gender-responsive M&E processes on the implementation of competency-based education programs.	Multiple Linear Regression Y = $\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \epsilon$	The null hypothesis is rejected if the overall F-test for the model is significant (<0.05) The joint influence is established if the regression coefficients for the independent variables are statistically significant.

Operationalization of Study Variables

Objectives	Variables	Indicators	Scale of Measurement	Research Approach	Types of Stastical Analysis	Tools of Data Analysis
To examine the influence of the combined gender responsive M&E processes on implementation of competency-based education programs in public primary schools in Kisumu County in Kenya.	Independent Variable Gender Responsive Utilization of M&E Findings	Gender Responsive Decision-Making Gender Responsive Project Improvement Gender Responsive Strategic Planning Gender Responsive Resource Allocation	Interval	Quantitative / Qualitative	Parametric / Non-parametric	Descriptive analysis, correlation analysis, regression analysis
Implementation of competency-based education programs in public primary schools in Kisumu County in Kenya.	Dependent Variable Implementation of Competency-based Education Programs	Promoting Stakeholder Involvement Phased Implementation Teacher Training and Development Resource Provision Curriculum Adaptation	Interval	Quantitative / Qualitative	Parametric / Non-parametric	Descriptive analysis, correlation analysis, regression analysis

Table 1.4: Operationalization of Study Variables

Data Analysis Methods

Quantitative data was analyzed using descriptive statistics and the Pearson correlation coefficient to understand the relationship between M&E practices and the progress of competency-based education programs, while qualitative data was analyzed using thematic content analysis to identify patterns within the qualitative data regarding the influence of gender-responsive monitoring and evaluation (GRME) on the implementation of these programs.

FINDINGS

This section presents the study's results, which are discussed in a cross-sectional manner across several thematic areas: questionnaire return rate, participants' demographic characteristics, and the four key components of Gender – Responsive Monitoring and Evaluation Process as they relate to Implementation of Competency-based Education Programs. This thematic area combines these Gender – Responsive Monitoring and Evaluation Process to examine their overall effect. This final objective was also analyzed using descriptive statistics, but the inferential analysis progressed to correlation analysis and multiple regression analysis to test for significant relationships. All statistical analyses were discussed simultaneously to provide a comprehensive and integrated view of the findings.

The key informant interviews, a qualitative data collection method, provided insights that were integrated with the quantitative descriptive statistics from the questionnaires. This triangulation of both qualitative and quantitative data enhanced the validity and reliability of the study's findings.

Questionnaire Return Rate

Out of the sample size of 226 respondents from the target population of 511, 226 questionnaires were issued to the study participants of which 213 were dully filled and returned giving a response rate of 94.25%. Table 1.5 shows the Questionnaire Return Rate for the research participants.

Table 1.5: Questionnaire Return Rate

Respondent	Sampled	Returned	Return rate
Number	226	213	94.25%

Based on the data in Table 1.5, the study achieved an excellent questionnaire return rate, indicating a highly successful data collection process.

Of the 226 questionnaires issued to the study participants, 213 were fully completed and returned. This yielded a return rate of 94.25%. This high rate was achieved through diligent follow-up with all sampled respondents during data collection. According to established research methodologies, such as those by Mugenda and Mugenda (2003) and Kothari (2004), a response rate above 50% is generally considered acceptable for research purposes. The exceptional return rate in this study, far exceeding this threshold, ensured that the collected data is highly representative of the sampled population, thereby minimizing the risk of non-response bias.

Demographic characteristics of implementation of School Based Peace Education Programs

The demographic profile of 164 respondents was necessary mainly because it serve as a foundational context for understanding the key characteristics of the study participants in relation to current study. Data were systematically collected on key variables related to their roles, The Years one Started Implementing School Based Peace Education Programs in High Schools in Bungoma County academic, Funding Sources for the School Based Peace Education Programs context and approaches Used in School Based Peace Education Programs as presented in Table 1.6

Table 1.6 Demographic Characteristics of Competency-based Education Programs (n=213)

Characteristics	n(f) frequency	(%) percent
Position/Role in the School		
Head of Institution	79	37.1
Deputy Head of Institution	29	13.6
Panel Heads	90	42.3
Others	15	7.0
Total	213	100
Approaches Used in School Based Peace Education Programs		
Learner-Centered Pedagogy	50	23.5
Integration of Core Competencies	43	20.2
Competency-Based Assessment	56	26.3
Technology Integration	36	16.9
Community Engagement	14	6.6
Teacher Training and Support	9	4.2
Other Sources	5	2.3
Total	213	100

Based on the data presented in the revised Table 1.6, the following statistical implications can be drawn regarding the implementation of Competency-Based Education (CBE) programs in public primary schools in Kisumu County.

Implementation of Competence-Based Education Programs in Public Primary Schools (QUAN → QUAL)

Implementation of Competence Based Education Programs in Public Primary served as the dependent variable in this study. Building on both theoretical and empirical frameworks, the study identified five key indicators of implementation of school-based education programs: promoting stakeholder involvement, phased implementation, teacher training development, resource provision and curriculum adaptation. To measure these indicators, participants responded to a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree).

For primary data analysis, this ordinal scale was statistically transformed into an equidistant, or interval, scale to meet the assumptions of the parametric statistical methods used in the study. The qualitative interpretation of the results followed Nyutu's (2021) categorization, where mean scores were interpreted as follows: a point range of 1.00 - 1.80 for strongly disagree, 1.81-2.60 for Disagree, 2.61-3.40 for Neutral, 3.41-4.20 for Agree and 4.21- 5.00 for Strongly agree.

STATEMENTS	SA	A	N	D	SD	Mean	Std. dev	skewnes
1 Successful implementation of CBE requires the involvement and support of all stakeholders, including teachers, parents, school administrators, and education officials	69(32.4%)	119(55.9%)	12(5.6%)	7(3.3%)	6(2.8%)	4.12	0.869	-1.58
2. Insufficient funding from the government can limit the resources available for CBE implementation.	71(33.4%)	119(55.9%)	12(5.6%)	5(2.3%)	6(2.8%)	4.15	0.848	-1.64
3. CBE often relies on technology, and teachers may lack the necessary ICT skills for effective integration.	87(40.9%)	100(39%)	23(10.8%)	3(1.4%)	0(0.00%)	4.27	0.708	-0.686
4 Unclear educational policies and guidelines create confusion and inconsistencies in implementation.	84(39.4%)	95(44.7%)	28(13.1%)	3(1.4%)	3(1.4%)	4.19	0.822	-1.14
5.Many teachers are accustomed to traditional, teacher-centered approaches and find it challenging to adapt to CBE's learner-centered approach.	94(44.2%)	81(38%)	36(16.9%)	2(0.9%)	0(0.00%)	4.25	0.766	-0.594
6. Many teachers lack sufficient training on CBE methodologies and assessment practices	130(61.1%)	42(19.7%)	38(17.8%)	1(0.5%)	2(0.9%)	4.39	0.860	-1.26
7.Teachers struggle to translate the curriculum content to practical learning experience	133(62.4%)	51(23.9%)	26(12.3%)	1(0.5%)	2(0.9%)	4.46	0.798	-1.54
8. Poor infrastructure, including inadequate classroom space and unreliable internet connectivity, can significantly hinder the effective delivery of CBE-aligned education	86(40.4%)	84(39.5%)	38(17.8%)	5(2.3%)	0(0.00%)	4.18	0.805	-0.609
9. Some schools still rely heavily on traditional, summative assessments, neglecting the formative assessment practices central to CBE.	86(40.4%)	92(43.2%)	29(13.6%)	6(2.8%)	0(0.00%)	4.21	0.782	--0.749

10. Shifting to competency-based assessment requires a change in mindset and the development of new assessment tools and practices.	75(35.3%)	87(40.8%)	33(15.5%)	9(4.2%)	9(4.2%)	3.99	1.03	-1.15
Composite mean & Composite standard deviation						4.22	0.817	

The data was then analyzed and presented using descriptive statistics, including frequencies, percentages, means, and standard deviations for each item. Both individual item means and standard deviations, as well as composite means and standard deviations, were calculated and presented in Table 1.7.

Table 1.7: Implementation of Competence Based Education Programs

Phase 1: Quantitative Data Analysis (QUAN)

Based on the provided Table 1.7, the results show that the implementation of Competence Based Education (CBE) programs in public primary schools within Kisumu County faces significant challenges. The data points to a general consensus among respondents that these barriers are substantial. The results indicate that the composite mean for the implementation of these programs is 4.22, with a composite standard deviation of 0.817. This high mean score, falling between "Agree" and "Strongly Agree" on the scale, indicates that respondents have a very positive perception of the barriers' significance. The low composite standard deviation suggests a high degree of consensus among respondents. These results align with the findings of UNESCO (2022), which highlights that educational reforms often face hurdles related to funding, teacher training, and policy clarity.

Analysis of CBE Program Implementation Challenges and their Implications

The following analysis examines key challenges in implementing the Competence-Based Education (CBE) program in public primary schools, incorporating the implications of the survey results for each finding.

Statement 1: *“Successful implementation of CBE requires the involvement and support of all stakeholders, including teachers, parents, school administrators, and education officials.”* With a high mean of 4.12 and a combined agreement rate of 88.3% (32.4% strongly agreed, 55.9% agreed), respondents overwhelmingly view stakeholder involvement as critical. This confirms that a collaborative approach is essential for successful educational reform. This implies that CBE programs must establish formal and transparent mechanisms to ensure all stakeholders are engaged, as their collective support is necessary to overcome resistance and facilitate program buy-in. The standard deviation of 0.869 (greater than the composite) indicates a divergence of opinion among respondents, suggesting that while everyone agrees on the importance of stakeholders, there might be differences in views on the level or type of involvement needed from each group.

Statement 2: *“Insufficient funding from the government can limit the resources available for CBE implementation.”* The high mean of 4.15 and strong consensus of 89.3% agreement (33.4% strongly agreed, 55.9% agreed) show that inadequate government funding is perceived

as a major barrier. This implies that without adequate financial support, schools will continue to struggle with acquiring necessary resources such as learning materials, technology, and improved infrastructure, which are vital for effective CBE implementation. The standard deviation of 0.848 (greater than the composite) points to a divergence of opinion, which may reflect different experiences with funding levels across various schools or a lack of consensus on the specific financial needs for a successful CBE rollout.

Statement 3: *“CBE often relies on technology, and teachers may lack the necessary ICT skills for effective integration.”* An overwhelming 79.9% of respondents agreed (40.9% strongly agreed, 39% agreed), with one of the highest means at 4.27. This indicates a widespread belief that a lack of teacher ICT skills is a significant obstacle. This implies that a fundamental component of CBE implementation must be comprehensive, ongoing teacher professional development programs that prioritize technology training and integration to bridge the digital skills gap. The standard deviation of 0.708 (less than the composite) shows a strong convergence of opinion, confirming that this is a widely experienced issue.

Statement 4: *“Unclear educational policies and guidelines create confusion and inconsistencies in implementation.”* The high mean of 4.19 and a combined agreement rate of 84.1% (39.4% strongly agreed, 44.7% agreed) indicate that policy clarity is a significant factor in successful CBE implementation. This implies that the Ministry of Education must provide more transparent, consistent, and easy-to-understand guidelines to reduce confusion among educators and ensure uniform program implementation across schools. The standard deviation of 0.822 (greater than the composite) suggests a divergence of opinion, which may stem from different interpretations of policies at various school levels.

Statement 5: *“Many teachers are accustomed to traditional, teacher-centered approaches and find it challenging to adapt to CBE's learner-centered approach.”* With a high mean of 4.25 and an 82.2% agreement rate (44.2% strongly agreed, 38% agreed), this finding highlights that teacher resistance to changing pedagogical approaches is a major hurdle. This implies a need for intensive training and support to help teachers transition from their traditional roles as information providers to facilitators of learning, a core requirement for a learner-centered CBE model. The standard deviation of 0.766 (less than the composite) indicates a strong convergence of opinion on this issue, suggesting it is a common challenge faced by educators.

Statement 6: *“Many teachers lack sufficient training on CBE methodologies and assessment practices.”* An impressive 80.8% of respondents agreed (61.1% strongly agreed, 19.7% agreed), with a high mean of 4.39. This confirms that a lack of adequate training is considered a primary challenge. This implies a significant need for comprehensive and continuous professional development programs on CBE methodologies and assessment practices to equip teachers with the skills necessary for effective program delivery. The standard deviation of 0.860 (greater than the composite) indicates a divergence of opinion, which could reflect differences in the quality or amount of training received by teachers in different regions or schools.

Statement 7: *“Teachers struggle to translate the curriculum content to practical learning experience.”* With the highest mean score of 4.46 and an 86.3% agreement rate (62.4% strongly agreed, 23.9% agreed), this statement demonstrates that teachers find it particularly difficult to make the curriculum practical. This implies that training for CBE implementation must focus on providing practical examples and hands-on strategies for teachers to apply in the classroom, ensuring that the curriculum's practical intent is realized. The standard deviation of 0.798 (less

than the composite) shows a strong convergence of opinion, indicating that this is a widespread challenge.

Statement 8: *“Poor infrastructure, including inadequate classroom space and unreliable internet connectivity, can significantly hinder the effective delivery of CBE-aligned education.”* A high mean of 4.18 and 79.9% agreement rate (40.4% strongly agreed, 39.5% agreed) confirm that poor infrastructure is a major logistical and practical challenge. This implies that significant investment is needed in school infrastructure to create an enabling environment for CBE, including modernizing classrooms and ensuring reliable internet connectivity to support digital learning. The standard deviation of 0.805 (less than the composite) indicates a convergence of opinion, confirming that this is a widely recognized and shared problem across schools.

Statement 9: *“Some schools still rely heavily on traditional, summative assessments, neglecting the formative assessment practices central to CBE.”* With a mean of 4.21 and an 83.6% agreement rate (40.4% strongly agreed, 43.2% agreed), the data shows that the reliance on traditional assessments is a significant barrier to CBE. This implies that there's a need for a fundamental change in mindset and a greater emphasis on formative assessment tools and practices to align with the core philosophy of CBE and measure student competencies. The standard deviation of 0.782 (less than the composite) indicates a convergence of opinion, suggesting that a lack of formative assessment is a common issue that needs to be addressed.

Statement 10: *“Shifting to competency-based assessment requires a change in mindset and the development of new assessment tools and practices.”* With a mean of 3.99 and 76.1% agreement (35.3% strongly agreed, 40.8% agreed), respondents agree that a change in mindset is required. This implies that a comprehensive, systemic strategy is needed to change assessment mindsets and provide educators with the skills and tools required to effectively transition from traditional to competency-based assessment. The standard deviation of 1.03 (greater than the composite) indicates a divergence of opinion. This may reflect different levels of understanding or readiness among educators to fully embrace the new assessment philosophy.

Phase 2: Qualitative Data Analysis (QUAL)

The Key Informant Interviews provided in-depth context to the quantitative findings, particularly explaining the magnitude of the teacher-related challenges and the nuance of stakeholder involvement.

Key Informant K-006 highlighted the dominant challenges concerning teachers and had this to say:

“The most significant challenge in implementing CBE has been the lack of sufficient training for teachers and a general resistance to change. Teachers, who are accustomed to traditional, teacher-centered methods, find it incredibly difficult to adapt to CBE's learner-centered approach. Many feel unprepared to teach and assess students' competencies without a clear syllabus or standardized exams. This resistance is rooted in a fear of the unknown and a lack of confidence in their ability to translate curriculum content into practical, real-world experiences. This aligns with the high mean scores for statements on teachers' lack of training and their struggle to adapt to the new approach.” K-006

Phase 3: Integration of Quantitative (QUAN) and Qualitative (QUAL) Results

The Explanatory Sequential Mixed Methods Design integrates the quantitative identification of challenges with the qualitative explanation of their root causes, providing a comprehensive understanding of CBE implementation.

1. Teacher Preparedness and Pedagogical Shift Failure

QUAN data identified the three highest challenges related to teachers: Curriculum Translation (Mean: 4.46), Lack of Training (Mean: 4.39), and Resistance to Learner-Centered Approach (Mean: 4.25). QUAL data (K-006) explains these findings as a single cohesive problem: a deep-seated "fear of the unknown" and a lack of confidence in teaching and assessing competencies, stemming directly from the inadequacy of professional development.

Conclusion: The central failure in CBE implementation lies in Insufficient Teacher Capacity and Systemic Pedagogical Resistance. The training provided has not been effective in equipping teachers to translate theory into practical application or overcome their adherence to traditional, teacher-centered methods.

2. Resource/Funding Gaps and Logistical Barriers

QUAN data agreed that Insufficient Funding (Mean: 4.15) and Poor Infrastructure/ICT (Mean: 4.18, 4.27) are major issues. The QUAL data on teacher resistance confirmed that CBE's reliance on technology, which is undermined by poor infrastructure, exacerbates teachers' feelings of being "unprepared."

Conclusion: The Lack of Adequate Resource Provision and Digital Infrastructure creates an environment where teachers cannot effectively implement the technologically and resource-intensive CBE approach, thereby reinforcing their resistance to change.

3. Stakeholder Involvement: Success in Leadership, Gap in Community

QUAN data reported the highest agreement rate on the criticality of stakeholder involvement (88.3%). QUAL data (K-004) contextualized this by specifying a success in administrative engagement (school administrators and officials actively guiding implementation). However, K-004 noted the need to extend this success to parents and the broader community.

Conclusion: Implementation is being effectively driven by top-down administrative support, which has been instrumental in navigating the curriculum, but its long-term success requires a sustained strategy to broaden collaborative buy-in to the grassroots level (parents and community) to ensure durability and acceptance of the new assessment and pedagogical models

The Joint Influence of Gender Responsive M&E Processes on implementation of competency-based education programs in public primary schools in Kisumu County in Kenya.

The study sought the perspectives of study participants on the joint effect of Gender Responsive M&E Processes on implementation of competency-based education programs in public primary schools in Kisumu County in Kenya.

This was the fifth objective the study sought to establish. The results are presented in Table

1.8.

Table 1.8: The Joint Influence of Gender Responsive M&E Processes on implementation of competency-based education programs

Joint effect of Gender Responsive M&E Processes on implementation of competency-based education programs in public primary schools in Kisumu County in Kenya.	n	Mean	Standard deviation
Gender Responsive M&E Planning of CBE Programs	213	4.22	0.788
Gender Responsive Data Collection of CBE Programs	213	4.15	0.932
Gender- Disaggregated M&E Data Analysis of CBE Programs	213	4.21	0.934
Gender responsive Utilization M&E Findings	213	4.18	0.916
Composite mean standard deviation &	213	4.19	0.893

The results from Table 1.8 consistently demonstrate a strong positive perceived joint effect of gender-responsive M&E processes on the implementation of Competence-Based Education (CBE) programs.

All four factors—Gender Responsive M&E Planning, Gender Responsive Data Collection, Gender-Disaggregated M&E Data Analysis, and Gender Responsive Utilization of M&E Findings—show high mean scores, underscoring their significant contribution.

The composite mean for these factors is 4.19, with a standard deviation of 0.893, confirming their overall positive impact. Individually, Gender Responsive M&E Planning has a mean of 4.22 (standard deviation 0.788), Gender-Disaggregated M&E Data Analysis has a mean of 4.21 (standard deviation 0.934), Gender Responsive Utilization of M&E Findings has a mean of 4.18 (standard deviation 0.916), and Gender Responsive Data Collection has a mean of 4.15 (standard deviation 0.932).

These findings imply that a comprehensive and gender-responsive approach to monitoring and evaluation is critical for the successful implementation of CBE programs. The high mean scores for all factors indicate that stakeholders have established strong foundations to support these programs, performing well in crucial areas that directly influence their effectiveness. This provides a solid groundwork for future interventions and policy development.

Correlation Analysis of the Joint Influence of Gender Responsive M&E Processes on implementation of competency-based education programs

In order to determine the correlation between the Joint *Influence* of Gender Responsive M&E Processes on implementation of competency-based education programs in public primary schools in Kisumu County in Kenya., Pearson correlation coefficient was run on the scores of each scale. The respondent at 95% level of confidence computed the total scores of the scales as a summation of the individual scores on each item. The results obtained are indicated in Table 1.9.

Table 1.9: Correlation Analysis of the Joint Influence of Gender Responsive M&E Processes on implementation of competency-based education programs

Joint Influence of Gender Responsive M&E Processes		Implementation of competency-based education programs
Gender Responsive M&E Planning of CBE Programs	<i>Pearson Correlation</i> <i>Sig. (2-tailed)</i> <i>n</i>	0.342* 0.000 213
Gender Responsive Data Collection of CBE Programs	<i>Pearson Correlation</i> <i>Sig. (2-tailed)</i> <i>n</i>	0.434* 0.000 213
Gender- Disaggregated M&E Data Analysis of CBE Programs	<i>Pearson Correlation</i> <i>Sig. (2-tailed)</i> <i>n</i>	0.385 0.000 213
Gender responsive Utilization M&E Findings	<i>Pearson Correlation</i> <i>Sig. (2-tailed)</i> <i>n</i>	0.650 0.000 213
Overall joint participatory monitoring and evaluation practices and implementation of peace education programs	<i>Pearson Correlation</i> <i>Sig. (2-tailed)</i> <i>n</i>	0.676* 0.000 213

*Significant at 0.05 level (2-tailed)

Table 1.9 reveals that all four independent variables—gender responsive M&E planning, gender responsive data collection, gender-disaggregated M&E data analysis, and gender responsive utilization of M&E findings—have a statistically significant positive linear relationship with the implementation of competency-based education (CBE) programs.

The correlation coefficients show the strength of these individual relationships: Gender Responsive M&E Planning: $r=0.342$, Gender Responsive Data Collection: $r=0.434$, Gender-Disaggregated M&E Data Analysis: $r=0.385$ and Gender Responsive Utilization of M&E Findings: $r=0.650$.

These findings suggest that each factor has a pronounced individual association with the implementation of CBE programs. Crucially, the overall joint influence of these four factors yields a strong positive correlation of $r=0.676$ with the implementation of CBE programs. This highlights that while each factor individually contributes positively, their combined influence is substantially more impactful.

The consistently low p-values ($p=0.000$) across all correlations (both individual and joint) provide very strong evidence that these observed relationships are not due to random chance.

This leads to the rejection of the null hypothesis and the acceptance of the alternative hypothesis.

Therefore, the study concludes that there is a significant relationship between the joint influence of gender-responsive M&E processes and the implementation of CBE programs. These findings are consistent with the work of Kioko, R. & Mutisya, F. (2022), who found that a combination of participatory processes and stakeholder involvement significantly improved the effectiveness of educational programs.

Regression Analysis of Joint Influence of Gender Responsive M&E Processes on implementation of competency-based education programs

Multiple linear regressions were adopted to investigate the Joint Influence of Gender Responsive M&E Processes on implementation of competency-based education programs. It was necessary to get the views of the study participants on the effect of Joint Influence of Gender Responsive M&E Processes on implementation of competency-based education programs

Model summary of Joint Influence of Gender Responsive M&E Processes on implementation of competency-based education programs

The model summary sought to determine how Joint Influence of Gender Responsive M&E Processes on implementation of competency-based education programs. The regression model output statistics results are shown in Table 1.10.

Table 1.10: Regression Analysis of Joint Influence of Gender Responsive M&E Processes on implementation of competency-based education programs

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.676 ^a	0.458	0.447	0.375

a. Predictor, (Constant), Joint Influence of Gender Responsive M&E Processes

The model summary in Table 1.10 presents key statistics from a regression analysis examining the joint influence of gender-responsive M&E processes on the implementation of Competence-Based Education (CBE) programs.

The R value of 0.676 indicates a strong positive multiple correlation. This confirms that when combined, these gender-responsive M&E processes have a substantial association with improved CBE program implementation.

The R-squared (R^2) value of 0.458 indicates that these processes, working together, explain 45.8% of the variation in CBE program implementation. This highlights their significant role in predicting success. The Adjusted R-squared of 0.447 further suggests that approximately 44.7% of the variance is genuinely accounted for by these factors, even after adjusting for the number of predictors in the model.

The Standard Error of the Estimate is 0.375, which means that, on average, the model's predictions for implementation scores deviate from the actual observed scores by about 0.375 units. This indicates a high level of precision in the model's predictions, given the large amount of variance explained.

The implications of these results are clear: a holistic strategy that simultaneously integrates gender-responsive M&E processes will lead to the most impactful improvements in implementing CBE programs. These findings support studies, such as the 2023 work by Onyango, T. et al., which found that a strong focus on community participation in educational program monitoring was a key factor in successful implementation.

An ANOVA of the Joint Influence of Gender Responsive M&E Processes on implementation of competency-based education programs

The study sought to establish whether the regression model is best fit for predicting implementation of competency-based education programs after use of Joint Gender Responsive M&E Processes. The regression ANOVA output statistics results are shown in Table 1.11.

Table 1.11: An ANOVA of the Joint Gender Responsive M&E Processes on implementation of competency-based education programs

Model	Sum of Squares	Df	Mean Square	F	Sig.	
1	Regression	24.581	4	6.145	43.653	0.000 ^b
	Residual	29.141	207	0.141		
	Total	53.722	211			

Dependent Variable: Implementation of competency-based education programs.
 Predictors: (Constant), Joint Gender Responsive M&E Processes

An ANOVA was performed as part of the multiple linear regression analysis to determine if the joint influence of gender-responsive M&E processes significantly explains the variance in the implementation of Competence-Based Education (CBE) programs.

The ANOVA results confirm that the overall regression model is statistically significant, $F(4,207)=43.653$, with a significance value of $p=0.000$. This finding suggests that the combined effect of gender-responsive M&E processes significantly predicts the implementation of CBE programs.

The analysis shows that the variation in implementation scores explained by the model (Sum of Squares for Regression = 24.581) is substantially larger than the unexplained variation (Sum of Squares for Residual = 29.141), providing strong evidence that these variables collectively have a real impact. This allows us to reject the null hypothesis and conclude that the model is a good fit for the data

Coefficients for the Regression of Joint Gender Responsive M&E Processes on implementation of competency-based education programs

The study sought to determine whether there was joint effect of Gender Responsive M&E Processes on implementation of competency-based education programs. The regression coefficients results are in Table 1.12.

Table 1.12: Coefficients for the Regression of Joint Gender Responsive M&E Processes on Implementation of competency-based education programs

Model	Coefficients					Sig.
	Unstandardized Coefficients		Standardized Coefficients	t		
	B	Std. Error				
Constant	0.917	0.295		3.110		
Gender Responsive M&E Planning	0.119	0.056	0.129	2.106	0.002	0.036
Gender Responsive Data Collection	0.091	0.052	0.110	1.735		0.084
Gender-Disaggregated M&E Data Analysis	0.089	0.059	0.089	1.469		0.143
Gender responsive Utilization M&E Findings	0.493	0.067	0.510	7.389		0.000

a. Dependent Variable: **Implementation of competency-based education programs**

The analysis in Table 1.12 details the unique contribution of each of the four gender-responsive M&E components—planning, data collection, data analysis, and utilization of findings—to the implementation of Competency-Based Education (CBE) programs, while holding the other variables constant

The multiple linear regression equation, incorporating all significant predictors, is:

$$Y=0.917+0.295X1+0.091X2+0.089X3+0.493X4$$

Where:

Y = Implementation of CBE Programs ; X1 = Gender-Responsive M&E Planning;

X2 = Gender-Responsive Data Collection, X3 = Gender-Disaggregated M&E Data Analysis

X4 = Gender-Responsive Utilization of M&E Findings

The Constant is 0.917, which is statistically significant (t=3.110, p=0.002).

The results indicate that Gender-Responsive Utilization of M&E Findings is the strongest and

most significant predictor, while Gender-Responsive Data Collection and Gender-Disaggregated M&E Data Analysis are not statistically significant when analyzed jointly with the other factors.

Gender-Responsive Utilization of M&E Findings (X4): This factor has the highest standardized coefficient ($\beta=0.510$) and is highly significant ($p=0.000$). This confirms that the act of using gender-disaggregated data to make changes and decisions is the single most powerful driver of successful CBE implementation. A one-unit increase in utilization predicts a 0.493-unit increase in CBE implementation.

Gender-Responsive M&E Planning (X1): This factor is also statistically significant ($p=0.036$). This suggests that setting a solid foundation by intentionally integrating gender goals into the M&E design significantly contributes to implementation. A one-unit increase in planning predicts a 0.295-unit increase in CBE implementation.

Non-Significant Predictors (X2 and X3): When all four factors are included in the model, Gender-Responsive Data Collection ($p=0.084$) and Gender-Disaggregated M&E Data Analysis ($p=0.143$) are not statistically significant predictors of CBE implementation.

The non-significance of data collection and analysis, when considered jointly, suggests that their beneficial effects are largely mediated through the final stage of Utilization (X4). In other words, simply collecting and analyzing the data isn't enough; the predictive power lies almost entirely in the commitment to take action based on those findings.

CONCLUSIONS AND RECOMMENDATIONS

This section presents summary of findings, conclusions and recommendations. In the summary of findings, the results for each of the hypothesis in the study are presented for the five research objectives. The conclusions presented in this section were guided by the research objectives and informed by the findings, analysis, interpretation and discussions in the study. Based on the conclusions made, the contribution of the study to knowledge is examined. Recommendations based on the results for policy and practice and for methodology as well as suggestions for further research are made.

Summary of Findings

This research objective was to examine the Joint Influence of Gender Responsive M&E Processes on implementation of competency-based education programs in public primary schools in Kisumu County in Kenya. The composite mean and composite Standard deviation for the combined influence of Participatory monitoring and evaluation practices on implementation of peace education programs were 4.19 and 0.893, respectively. This implies that, using the Likert scale, the respondents agreed that these four factors jointly and positively influence the implementation of peace education programs. The overall perception of this combined influence is high and positive.

The overall correlation coefficient of determination for the Joint Influence of Gender Responsive M&E Processes on implementation of competency-based education programs in public primary schools in Kisumu County in Kenya was found to be $r=0.676$ with a p-value of $0.000 < 0.05$. This implies that, from the views of the participants in the study, the results indicated that there was a significant joint relationship between the combined factors and the

implementation of competency-based education programs. This led to the rejection of the null hypothesis (H_0 : There is no significant relationship between the Joint Influence of Gender Responsive M&E Processes on implementation of competency-based education programs in public primary schools in Kisumu County in Kenya) and the acceptance of the alternative hypothesis. The R^2 value of 0.458 indicates that approximately 45.8% of the variance in the implementation of competency-based education programs in public primary schools in Kisumu County in Kenya can be explained by the joint influence of these four variables.

The ANOVA results from the study participants' views indicated that the regression model for the Joint Influence of *Gender Responsive M&E Processes* on implementation of competency-based education programs. was statistically significant ($F(4,207)=43.653$ and $p\text{-value}=0.000<0.05$). This confirms that the model is a good fit for the data and that the independent variables, when considered together, are significant predictors of the dependent variable.

The multiple linear regression coefficients result revealed that there was sufficient evidence that Gender Responsive M&E Processes jointly and significantly influence the implementation of peace education programs.

Conclusions

This research objective was to examine the extent to which the Joint Influence of Gender Responsive M&E Processes influences on implementation of competency-based education programs in public primary schools in Kisumu County in Kenya. The Multiple linear regression coefficients as well as the Pearson correlation results indicated that there was a significant joint *Influence* of Gender Responsive M&E Processes influences on implementation of competency-based education programs in public primary schools in Kisumu County in Kenya. The p-values implied that there was a significant joint influence of these factors on the implementation of competency-based education programs in public primary schools in Kisumu County in Kenya

Recommendations

Future Research and Methodology

Future studies should leverage this research to further investigate the causal pathways and combined effects of these variables. Researchers could use a longitudinal design to track CBE programs over time, providing deeper insights into how the influence of each gender-responsive M&E factor evolves. Additionally, qualitative research could explore the specific mechanisms of gender-responsive M&E in greater detail, providing rich contextual data to complement the quantitative findings and offer a more nuanced understanding of the challenges and successes in Kisumu County and beyond.

Areas for Further Research

Based on the findings and contributions of this study, which examined the influence of gender-responsive M&E processes on the implementation of Competency-Based Education (CBE) programs in public primary schools in Kisumu County, Kenya, here are key suggestions for future research:

1. Contextual Replication and Generalizability

This research focused on a specific geographical area, Kisumu County. Future studies should replicate this work in other counties or regions within Kenya and internationally. This would help determine if the identified relationships—between gender-responsive M&E and CBE implementation—are consistent across diverse socio-economic, cultural, and administrative environments. Such replication is crucial for establishing the generalizability of these findings.

2. The Role of Technology in M&E

With the increasing role of technology in education, future research should assess how digital platforms influence the factors studied here. For example, a study could explore the impact of online learning tools, digital platforms for collaborative M&E, or mobile applications for collecting real-time feedback on gender-responsive indicators. Such research would provide crucial insights into how technology can be used to improve the efficiency and reach of gender-responsive M&E in CBE programs.

3. Examining Other Influential Variables

This study identified specific aspects of gender-responsive M&E as key factors. Future research should empirically examine other potential variables that might influence the implementation of CBE programs. Possible factors to investigate include:

Teacher training and capacity: How does a teacher's knowledge and skill in implementing gender-responsive pedagogy affect program delivery?

Parental and community involvement: To what extent does community support influence the successful implementation of equitable CBE outcomes?

4. Longitudinal Studies

This study provided a snapshot of the relationships at a single point in time. A future longitudinal study could follow a cohort of schools over several years. This would provide valuable insights into how the influence of gender-responsive M&E processes changes over time, as well as how initial conditions and external shocks (like changes in funding or policy shifts) impact long-term program success and sustainability.

References

Abraha, M., Dagne, A., & Seifu, A. (2019). Gender responsive pedagogy: Practices, challenges & opportunities-A case of secondary schools of North Wollo Zone, Ethiopia. *Journal of education, society and behavioural science*, 30(3), 1-17.

Amran, N., Bahry, F. D. S., Anwar, N., & Yu, H. (2016). Educational Data Utilization by the School Administrators to Improve the Students' Academic Performance. *International Journal of Academic Research in Business and Social Sciences*, 6(11), 474-485.

Amutabi, M. N. (2019). Competency-based curriculum (CBC) and the end of an era in Kenya's education sector and implications for development: Some empirical reflections. *Journal of Popular Education in Africa*, 3(10), 45-66.

Ananga, E. D. (2021). Gender responsive pedagogy for teaching and learning: The practice in Ghana's initial teacher education programme. *Creative Education*, 12(04), 848.

Anderson, A. A. (2004). *Theory of Change. As a Tool for Strategic Planning. A Report on Early Experiences. The Aspen Institute-Roundtable on Community Change.*

Asad, M. M., & Qureshi, A. (2025). Impact of technology-based collaborative learning on students' competency-based education: insights from the higher education institution of Pakistan. *Higher Education, Skills and Work-Based Learning*, 15(3), 562-575.

Atthill, C., & Jha, J. (2009). *The gender-responsive school: An action guide. Commonwealth Secretariat.*

Ayalew, M. Z., Getahun, D. A., & Negasi, R. D. (2025). Challenges of practicing competence-based education at Bahir Dar University: Views of faculty and academic leaders. *Bahir Dar Journal of Education*, 25(2), 83-100.

Bosco, C., Alegana, V., Bird, T., Pezzulo, C., Bengtsson, L., Sorichetta, A., ... & Tatem, A. J. (2017). Exploring the high-resolution mapping of gender-disaggregated development indicators. *Journal of The Royal Society Interface*, 14(129), 20160825.

Burnette, D. M. (2016). The renewal of competency-based education: A review of the literature. *The Journal of Continuing Higher Education*, 64(2), 84-93.

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.

Chad, F. (2025). *Designing Competency-Based and Experiential Learning Materials for Future-Proof Education.*

Charles, T., & Alshamsi, A. (2025). Navigating Challenges in Technology Integration for Inclusive Classrooms: Insights for Pre-Service Teachers. In *Empowering Pre-Service Teachers to Enhance Inclusive Education Through Technology* (pp. 87-126). IGI Global Scientific Publishing.

Christopher, M., & Jones, M. (2025). Evaluating contexts for implementing a competency-based curriculum in south and eastern Africa: A meta-narrative review. *The Curriculum Journal*, 36(3), 368-383.

Crenshaw, K. (2015). Why intersectionality can't wait. *The Washington Post*, 24(09), 2015.

Crenshaw, K. W. (2013). Mapping the margins: Intersectionality, identity politics, and violence against women of color. In *The public nature of private violence* (pp. 93-118). Routledge.

Cyprian, D., Chikuvadze, P., Young, M., Daimond, D., & Claretah, M. (2025). Competence-based education pedagogy and its infusion into primary school learning activities: Experiences from teachers in a selected cluster in Eswatini. *Journal of Educational Research and Practice*, 3(1), 1-15.

Dorimé-Williams, M. (2023). Promoting Equity in Methodological Considerations For Disaggregated Data. *Journal of Policy Analysis & Management*, 42(2).

- Dulal, T. D. (2025). Application of Positivism and Post Positivism Approach in Contemporary Research. *International Journal of Applied Research and Sustainable Sciences*, 3(4), 305-314.
- DuLany, D. P. (2025). *If You Spark It, They Will Learn: Administrators' Views on Identifying Diverse Talent for Enrichment Program Participation* (Doctoral dissertation, The University of North Carolina at Wilmington).
- Duma, M. G. (2022). Gender mainstreaming plan for gender-responsive public schools. *PUPIL: International Journal of Teaching, Education and Learning*, 5(3), 144-161.
- Esariti, L., & Sabana, M. R. (2019, August). The Importance of Disaggregated Data in Learning from Gender Mainstreaming Poverty Reduction Program of Sumogawe Village Semarang. In *IOP Conference Series: Earth and Environmental Science* (Vol. 313, No. 1, p. 012025). IOP Publishing.
- Famela, Q. (2024). Gender responsiveness in the Philippine basic education context: Priority thrusts and initiatives in the schools division of Batangas City. *J. Electrical Systems*, 20(5s), 882-903.
- Filiz, O., Kaya, M. H., & Adiguzel, T. (2025). Teachers and AI: Understanding the factors influencing AI integration in K-12 education. *Education and Information Technologies*, 1-37.
- Gales, M., Phillips, E. L. Y., Pao, L. Z., Dubray, C., Elizalde, C. R. R., Heidari, S., ... & Carter, S. E. (2025). Beyond COVID-19, the case for collecting, analysing and using sex-disaggregated data and gendered data to inform outbreak response: a scoping review. *BMJ Global Health*, 10(1).
- Ghosh, S., & Sankar, C. S. (2024). Competency-based teacher education in gender and inclusive practices. *Social Science Journal for Advanced Research*, 4(5), 18-25.
- Gichurur, C. (2024). The challenges encountered in implementing the competency-based curriculum within junior secondary schools in Kenya. *International Journal of Education, Technology and Science*, 4(1), 1675-1692.
- Hayat, E. W., & Adiyono, A. (2025). Innovative strategies for developing competency-based learning evaluation in Madrasah Ibtidaiyah under the independent **curriculum**. *Journal of Elementary Education Research and Practice*, 1(1), 49-62.
- Herut, A. H., Dube, E. E., & Yimer, S. S. (2022). Implementation of gender-responsive initiatives in primary schools of abaya, Gedeb, and Yirgachefe Woredas: Invitational education approach. *The International Journal of Educational Organization and Leadership*, 29(2), 73.
- Ivankova, N. V., Creswell, J. W., & Stick, S. L. (2006). Using mixed-methods sequential explanatory design: From theory to practice. *Field methods*, 18(1), 3-20.
- Jansen van Rensburg, M. S., & Mapitsa, C. B. (2017). Gender responsiveness diagnostic of national monitoring and evaluation systems-methodological reflections. *African Evaluation Journal*, 5(1).

Johnson, G. (2021). Producing transformative change: exploring the relationships between identity, reform, and competency-based practices (Doctoral dissertation, University of Illinois at Urbana-Champaign).

Johnstone, S. M., & Soares, L. (2014). Principles for developing competency-based education programs. *Change: The Magazine of Higher Learning*, 46(2), 12-19.

Jwan, S. T. (2022). Competency-based Education and Training (CBET) in Kenya: Policies, Opportunities and Challenges. *Alternation*.

Kailo, M., Njagi, L., Kalai, J. M., & Mutegi, R. (2025). The Influence of Training Approaches in In-Service Teacher Training on the Implementation of the Competence-Based Curriculum in Public Primary Schools in Kilifi County, Kenya.

Kalbarczyk, A., Krugman, D., Elnakib, S., Hazel, E., Luo, A., Malhotra, A., & Morgan, R. (2025). Towards a common understanding of gender-responsive monitoring and evaluation for health programs and interventions: evidence from a scoping review. *SSM-Health Systems*, 100059.

Kitada, M., Johannesen, E., Ojwala, R. A., Buckingham, S., Sun, Z., Rodríguez-Chaves, M., ... & Schofield, C. (2023). Barriers to the collection of gender-disaggregated data in ocean science. *Human Factors in Management and Leadership*, 71.

Kohlhaas, K., Lin, H. H., & Chu, K. L. (2010). Disaggregated outcomes of gender, ethnicity, and poverty on fifth grade science performance. *RMLE Online*, 33(7), 1-12.

Lachat, M. A., & Smith, S. (2005). Practices that support data use in urban high schools. *Journal of education for students placed at risk*, 10(3), 333-349.

Leveraging, M. E. (2017). *Making Gender Count*.

Little, H. P. (2025). Faculty Voices in CBE: A Focus Group Study About Community College Faculty Perceptions and Attitudes About Competency-Based Education (Doctoral dissertation, Morehead State University).

Liu, H., Wang, Y., & Wang, H. (2025). Exploring the mediating roles of motivation and boredom in basic psychological needs and behavioural engagement in English learning: a self-determination theory perspective. *BMC psychology*, 13(1), 179.

Liu, R. Z., Shockley, E. T., Curry, D. G., & Conley, C. M. (2025). Educational Equity Through a Critical Race Perspective of Antiracism and Intersectionality: Disrupting Colorblind Ideologies in School Leaders' Praxis. *The Urban Review*, 1-26.

Lopez, M. S., & Andal, E. Z. (2024). Gender-Responsive Pedagogy and Attitude toward Sensitivity in Basic Education. *TWIST*, 19(3), 583-588.

Magassouba, L., & Ishizaka, H. (2025). Exploring the Challenges Faced by Teachers in Implementing a Competency-Based Approach in Teaching EFL in Mali. *鳴門教育大学国際教育協力研究*, 18, 153-161.

- Mandela, R. (2021). Re-Energizing Gender Learning in the Context of the Competency-based Curriculum in Kenya. *Msingi Journal*, 5(1), 37-54.
- Mauti, J. M., Moindi, R., & Masagara, G. A. (2025). Teacher Education in the Advent of Transition of Education Systems in Kenya. *Journal of the Kenya National Commission for UNESCO*.
- Midigo, J. (2025). Integrating Multiple Teaching Strategies in Language Learning for Teacher Training in the Digital Era. *Innovations in Pedagogy and Technology*, 1(1), 1-18.
- Miletto, M., Pangare, V., Thuy, L., & Piccione, P. (2021, March). Gender-Responsive Indicators to Close the Sex-Disaggregated Water Data Gap. In *Advances in Geoethics and Groundwater Management: Theory and Practice for a Sustainable Development: Proceedings of the 1st Congress on Geoethics and Groundwater Management (GEOETH&GWM'20)*, Porto, Portugal 2020 (pp. 381-383). Cham: Springer International Publishing.
- Miralles-Cardona, C., Kitta, I., & Cardona-Moltó, M. C. (2023). Exploring pre-service STEM teachers' capacity to teach using a gender-responsive approach. *Sustainability*, 15(14), 11127.
- Mustofa, I., Dara, S., & Sok, V. S. (2025). Policy and Practice of Competency-Based Education in Indonesia: Challenges and Prospects for the Future. *Journal Emerging Technologies in Education*, 3(2), 54-64.
- Muthoka, J. M., & Mbirithi, D. M. (2025). Teachers' preparedness and its effect on the implementation of competency-based curriculum in public primary schools in Taita Taveta County, Kenya. *International Academic Journal of Social Sciences and Education (IAJSSE)*, 2(4), 69-76.
- Mwereria, M. J., Thinguri, R., & Muigai, J. (2025). Influence Of Teacher Training On Implementation Of Competency-Based Curriculum In Public Primary Schools In Igembe Central Sub-County, Meru County, Kenya. *African Journal of Emerging Issues*, 7(14), 1-12.
- Njue, V. M., & Murungi, C. (2025). Parent-guided competency-based take home assignments: implication on grade three learners' skills development in Embu County, Kenya. *International Academic Journal of Social Sciences and Education (IAJSSE)*, 2(4), 205-222.
- Ogada, E. (2025). The Role of Educational Philosophy in Shaping Competency-Based Education (CBE) Implementation in Kenya. *Journal of African Interdisciplinary Studies*, 9(5), 5-17.
- Ogembo, P. O. (2025). The Implementation of Competency-based Curriculum in Public Schools in Kenya: Challenges and Opportunities. *Indonesian Journal of Education (INJOE)*, 5(1), 57-77.
- Ondieki, C., Kimani, G. N., & Tanui, E. K. (2018). Deficiencies of competency-based education and training in higher education institutions in Kenya.
- Oroszi, T. (2020). Competency-based education. *Creative Education*, 11(11), 2467-2476.

Owuor, E. (2022). A Comparative Study on Factors Influencing Implementation of Competency-based Curriculum in Private and Public Primary Schools in Mbita Sub-County, Kenya (Doctoral dissertation, University of Nairobi).

Rarieya, J., Wango, N., Oluga, M., & Abunga, O. (2024). Accelerating primary education tutors' acquisition of gender-responsive pedagogies. *European Journal of Education and Pedagogy*, 5(4), 47.

Reeve, J. (2012). A self-determination theory perspective on student engagement. In *Handbook of research on student engagement* (pp. 149-172). Boston, MA: Springer US.

Richter, F. G. C., & Brorsen, B. W. (2006). Aggregate versus disaggregate data in measuring school quality. *Journal of Productivity Analysis*, 25(3), 279-289.

Rwezaura, P. P. (2016). The implementation of competence-based english curriculum in Kinondoni municipal primary schools (Doctoral dissertation, The Open University of Tanzania).

Sahito, Z. H., Khoso, F. J., & Kerio, G. A. (2025). Developing Innovative Educational Assessment Practices for the 21st Century: A Study on Formative, Summative, and Adaptive Testing. *Review Journal of Social Psychology & Social Works*, 3(1), 257-267.

Sathyan, A. R., & Sam, A. S. (2022). Gender Sensitive Monitoring and Evaluation: Prospects and Challenges. *Engendering Agricultural Development*, 133-145.

Setioko, W., & Wangsanata, V. C. (2025). Utilizing Theory Of Change In Designing Impactful Social And Educational Programs. Seeij (*Social Economics and Ecology International Journal*), 9(1), 27-37.

Soto, A. J. C., & Escorza, Y. H. (2025, January). The Importance of Adopting Competency-Based Learning in the Curricular Innovation Of Teacher Training Schools. In 2025 Institute for the Future of Education Conference (IFE) (pp. 1-10). IEEE.

Taplin, D. H., Clark, H., Collins, E., & Colby, D. C. (2013). Theory of change. Technical papers: a series of papers to support development of theories of change based on practice in the field. ActKnowledge, New York, NY, USA.

Teranishi, R. T., Nguyen, B. M. D., Alcantar, C. M., & Curammeng, E. R. (Eds.). (2020). *Measuring race: why disaggregating data matters for addressing educational inequality*. Teachers College Press

Thabiti, T. H., Mwandilawa, B., & Basela, J. (2024). Examining the influence of gender-responsive pedagogies on students' academic performance in secondary schools in Tanzania: The case of Mafia District. *Journal of Management and Policy Issues in Education*, 1(1), 71-85.

Treskon, L., & Bright, C. L. (2017). Bringing gender-responsive principles into practice. Center for Criminal Justice Research. Retrieved from www.mdrc.org/sites/default/files/PACE_brief_March2017_web.pdf.

Upadhaya, A., & Sah, P. K. (2019). Education, English language, and girls' development: Exploring gender-responsive policies and practices in Nepal. *Creating an inclusive school environment*, 105-114.

Villegas, D. C., Entienza, P. S. V., Lonzaga, M. A. S., Medina, H. P. D., & Oruga, R. L. (2025). Awareness and Implementation of Gender-Responsive Basic Education Policy.

Warui, J. P. (2025). School-Related Factors Influencing Use of Competency-Based Assessment in Pre-Primary Schools in Nyeri County, Kenya (Doctoral dissertation, Kenyatta University).

Wigati, I. (2019). The social aspects of gender-responsiveness in schools. *Sawwa: Jurnal Studi Gender*, 14(2), 147-162.

Wilson, P. M., Mack, D. E., & Grattan, K. P. (2008). Understanding motivation for exercise: a self-determination theory perspective. *Canadian Psychology/Psychologie Canadienne*, 49(3), 250.

Wokadala, J. (2016). Gender responsiveness diagnostic report of national monitoring and evaluation systems in Uganda.